

**KNOWLEDGE AND INVOLVEMENT OF MARRIED MEN IN  
COMPLEMENTARY FEEDING IN IBADAN SOUTH – WEST LOCAL  
GOVERNMENT AREA OF OYO STATE**

**BY**

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## **DEDICATION**

This project is dedicated to God who saw me through this programme

And

My aunt (Late Miss AbsetuSalawu) whose immense contributions and assistance during the period of this programme cannot be forgotten.

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## ACKNOWLEDGEMENT

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**Damilola Adesola, ADEWALE**

## ABSTRACT

The quality of complementary foods has been established to be one of the most cost-effective strategies for improving health and reducing morbidity and mortality among children. Unbalanced nutrition in early life have long-lasting and irreversible consequences, including growth failure, poor resistance to infections and impaired learning capabilities. Over the years however, mothers have been the primary caregivers of the infant and young child hence many behaviour change approaches have focused on improving their knowledge gaps with little attention being paid to influence of fathers despite the fact that they are major decision makers of homes and are major influencers of mother's adoption of optimal infant feeding. Hence, the study investigated knowledge and level of involvement in complementary feeding among married men in Ibadan South West Local Government Area of Oyo State.

A descriptive cross-sectional study design was employed using a multi-stage sampling technique to select a sample size of 290 married men in Ibadan South West Local Government Area. A validated semi-structured interviewer-administered questionnaire was used for data collection. Knowledge was measured using a 29-point scale, scores  $\leq 15$  were rated as poor while scores  $> 15$  were categorised as good. Involvement was measured using a 20-point scale. Scores  $\leq 10$  were rated poor, scores  $> 10$  were categorised as good involvement. Descriptive statistics and Chi-square tests were then used to analyse data at 95% level of significance.

The mean age of the respondents was  $39.0 \pm 8.4$  years and majority (85.9%) of them were Yoruba. Majority (61.7%) were also Christians. The mean number of respondents' children was  $3.0 \pm 1.8$  and most respondents (77.2%) had between one to three children. Only 0.4% of the respondents were able to give a correct definition of complementary feeding while a majority of the respondents (91.0%) gave varying wrong answers. As much as 67.8% of respondents had poor knowledge of complementary feeding while 32.1% had good knowledge. The mean score for involvement was  $12.2 \pm 2.4$ . Sharing of information on complementary feeding by parents of the young children was however low as 27.2% of the respondents stated that they did not share such information. There were multiple preferable sources of information by the respondents on complementary feeding. However, their most preferred sources were hospitals (17.9%), internet (15.9%) and radio (14.8%). There was no significant relationship between level of education/age of respondents and knowledge of complementary feeding. There was also no significant relationship between knowledge and level of involvement of respondents in complementary feeding.

Overall, most of the respondents had good involvement in complementary feeding. However, their knowledge was very poor hence it is recommended that more integrative and participative approaches on the social media and other related platforms that would target the males should be utilised to increase male knowledge which would further enhance positive involvement and adoption of appropriate complementary feeding behaviours.

**Keywords: Complementary feeding, male involvement, child feeding**

**Word count: 462**

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**CERTIFICATION**

I hereby certify that this research work was carried out by Damilola Adesola ADEWALE in the Department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan.

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## LIST OF ACRONYMS

**WHO:** World Health Organisation

**FAO:** Food and Agriculture Organisation

**USAID:** United States Agency for International Development

**FMOH:** Federal Ministry of Health

**PAHO:** Pan American Health Organisation

**SPSS:** Statistical Package for Social Science

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## DEFINITION OF KEY TERMS

**Complementary foods:** Refers to any non-breast milk foods or nutritive liquids that are given to young children during the period of complementary feeding (WHO, 2006b).

**Complementary feeding:** Refers to the period during which other foods or liquid are provided to infants and young children alongside breast milk (WHO, 2006b).

**Nutritional status:-** For this study it will include; underweight (weight-for-age below -2 Standard deviation (SD) of the WHO Child Growth Standards), stunting (height-for-age below -2 SD of the WHO Child Growth Standards), wasting ( weight-for-height below -2SD of the WHO Child Growth Standards) among children 6-23 months of age.

## OPERATIONAL DEFINITION OF TERMS

For the purpose of this research, the following words were defined as follows;

**Knowledge:** Refers to correct responses given by married men regarding complementary feeding based on the guiding principles of complementary feeding for a breastfed child which will be elicited through open ended questions

**Male Involvement:** Refers to correct responses given by married men on their active participation in complementary feeding of children

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## CHAPTER ONE

### 1.0 INTRODUCTION

#### 1.1 Background to the study

The WHO defines complementary feeding as the introduction of appropriate and safe foods to children aged six months and above (WHO, 2008) in order to allow infants and young children to meet evolving nutritional requirements necessary for optimal growth, development and good health (WHO, 2003). Complementary feeding thus refers to the provision of other foods in addition to breast milk which can either be a special preparation for the infant or usual family foods that are modified in order to make them easy to eat (Palmer, 2009).

Introduction of complementary foods to infants is often accompanied by stress and ill health (Kikafunda, Walker and Tumwine, 2003) especially when the food is not tailored to the child's needs and the feeding practices deprive the child of the highly required nutrients (UBOS, 2006). It is therefore, paramount that feeding and child care during this period be optimized, focusing mainly on frequency of feeding, the energy density of the foods, diversity of foods in the diet, the safety of the foods and the feeding process (Black, Allen, Bhatta, Caufield, Onis, Ezzati, Mathers and Rivera, 2008).

The period from birth to two years of age is a "critical window" for the promotion of optimal growth, health and cognitive development (Srivatsava and Sandhu, 2007). Early years have been recognized as the time for developing good dietary habits and important time for taking in nutrients for optimal growth and development (Engle, Pelton and Bentley, 2000). Poor breastfeeding patterns, low nutrient density and poor quality of complementary foods accounts for nutrient deficiency, illness and infections in children leading to malnutrition at an early age (Srivatsava and Sandhu, 2007). Malnutrition thus has a profound effect on a child's growth and development, as it can lead to permanent stunting, impaired brain and motor development or excessive weight gain, which may predispose the child to obesity later in life (Shrimpton, 2001).

Over the years, mothers have been the primary caregivers of the infant and young child hence many behaviour change approaches are focused on improving knowledge gaps of mothers and little attention have been paid to ecological and social factors that may negatively affect a mother's infant feeding behaviours (McInnes, Hoddinott, Britten, Darwent and Craig, 2013) such as the influence of fathers and grandmothers who as a result of cultural norms may have



social influences that may sometimes be negative on a mother's adoption of optimal infant feeding practices (Aubel, 2012).

Knowledge amongst other factors that influence infant feeding are important because infants will become stunted if they do not receive sufficient complementary foods in terms of quality and quantity after the recommended breastfeeding practices for the first six months of life (Black et al., 2008). Studies have shown that a combination of complex factors including knowledge, attitudes, traditions, societal norms, support from partners, family members, and the wider community influence infant feeding decisions (NARESA, 2008). A mother could be knowledgeable in appropriate infant feeding skills but she might not have the decision making power to act on it. This is supported by studies on fathers observed to influence how a mother feeds her child (Magawa, 2012; Fjeld, Siziya, Katepa-Bwalya, Kankasa, Moland, & Tylleskär, 2008). Thus, in order to improve infant feeding practices, it is essential that mothers and their spouses, caregivers, and family members have accurate information about complementary feeding necessary for optimal growth of the infant and young child from six months of age in order to provide necessary support for the mothers.

Improved quality of complementary foods has been established to be one of the most cost-effective strategies for improving health and reducing morbidity and mortality in young children (Krebs and Hambidge, 2007) however, formative studies have found that caregivers, fathers, and grandmothers typically lack up-to-date knowledge of optimal infant and young child feeding practices, particularly during the complementary feeding period (USAID, 2011) hence the need for this study which is to investigate the knowledge and level of involvement in complementary feeding among men in Ibadan south west local government area of Ibadan, Oyo state.

## **1.2 Statement of the problem**

Inappropriate feeding practices during the first two years of life are a major cause of undernutrition in young children. The number of global deaths and disability-adjusted life-years caused by undernutrition constitutes the largest proportion of any risk factors in children under the age of five (Black, Victora, Walker, Bhutta, Christian and de Onis, 2013). Unbalanced nutrition in early life also has long-lasting and irreversible consequences, including growth failure, poor resistance to infections and impaired learning capabilities (Victora, Adair, Fall, Hallal, Martorell and Richter, 2008). Children who are undernourished during the first two years of life and who then gain weight rapidly later in childhood, are also at greater risk of chronic diseases in later life.

It is well documented that fathers lag behind mothers in their levels of involvement in caring for children across most societies (Lamb, 2005; Pleck&Masciadrelli, 2004). Most infant feeding campaigns are almost always directed to the mother and are based on the assumption that women are free to make their own decisions on feeding their infants however, in all cultures, a number of factors that affect women's decisions on how to feed their children such as the influence of significant others are under researched (Matusiak, 2005).

Fathers play a very important role in the family and their contributions or exclusion impact the overall wellbeing of mothers and their infants (Okolo, 2013). So also, decision making and providing for the family is mostly a father's role as observed by some studies in Africa (Kuyper and Dewey, 2012; Fjeld, Siziya, Katepa-Bwalya, Kankasa, Moland and Tylleskär, 2008) thus, non involvement of men in infant feeding could be a contributory factor to child malnutrition especially in Nigeria as they can directly or indirectly influence the mother's complementary feeding practices and infant nutrition.

Furthermore, due to the fact that complementary feeding is the vulnerable period of transition from exclusive breastfeeding to family diet, the incidence of undernutrition thus rises rapidly during this period of complementary feeding from the age of 6 months until 18 months in many developing countries (Victora, de Onis, Hallal, Blossner, Shrimpton and 2010, Black et al. 2008).

Thus as most child undernutrition occurs in the very vulnerable period of complementary feeding, more research is needed on knowledge of caregivers and influence/involvement of significant others such as male spouses based on their knowledge of complementary feeding in order to gain more understanding of enabling factors that could facilitate optimal complementary feeding for the ultimate goal of ensuring optimum growth and development of the infant and young child.

### **1.3 Justification**

Many observational studies show that knowledge of optimal child feeding practices like exclusive breastfeeding for six months, continued breastfeeding and the timely transition to adequate complementary food is basic to ensuring optimal growth and development of children (WHO, 2010). Interventions to address child malnutrition also show that appropriate complementary feeding practices can save up to 6% of all under-five deaths (Jones, Steketee, Black, Bhutta, Morris, and Bellagio, 2003), stressing the need to give attention to decisions taken by the mother during complementary feeding (Bereng, Bilkes and Nxumalo, 2007).

However, according to Pelto et al. (2003), feeding of infants should be a family affair rather than being limited to the mothers alone.

Male partners have also been engaged in breastfeeding promotion and education as well as being provided with knowledge and skills for optimal breastfeeding practices which has shown to positively impact exclusive breastfeeding rates (Susin and Giugliani, 2008) but the significance of family members such as the spouses on complementary feeding have thus been less explored. Compared to breastfeeding, complementary feeding is more of a family responsibility, and not something provided only by the mother for free (Piwoz, Huffman and Quinn, 2003). Even though mothers usually prepare the food for children, other people such as fathers, grandmothers, cousins, aunts, siblings and other community members are often involved in the feeding process, either directly or indirectly; providing financial, emotional or social support (Pelto, Levitt and Thairu 2003). In some societies, women might not have the power to use the household wealth as they wish. Mothers' adequate knowledge of appropriate care may therefore have only a minor impact on actual practices, if their partners are not informed as well (Abubakar et al, 2011).

Also, few studies have described risk factors for the causation of childhood malnutrition as inappropriate initiation of complementary feeding (Amsalu and Tigabu, 2008; Mohammed, 2013) while another has identified poor consistency and adequacy as the likely risk factors (Mishra, Kumar, Basu, Rai, Aneja, 2014) however, very few studies have identified knowledge and involvement of men on complementary feeding as a potential enabling factor for appropriate complementary feeding.

Based on these findings, it can be beneficial to investigate knowledge of men on complementary feeding in order to further improve complementary feeding practices for optimal growth and development of infants and young children.

#### **1.4 Research Questions**

This research aims at providing answers to the following questions:

1. What is the level of knowledge of complementary feeding among married men in Ibadan South West Local Government Area of Ibadan?
2. What is the level of involvement in complementary feeding among married men in Ibadan South West Local Government Area of Ibadan?
3. What factors influence involvement in complementary feeding among married men in Ibadan South West Local Government Area of Ibadan?

4. What are the sources of information on complementary feeding available to married men in Ibadan South West Local Government Area of Ibadan?

### **1.5 Broad Objective**

The main aim of this study is to investigate knowledge and level of involvement in complementary feeding among married men in Ibadan South West Local Government Area of Ibadan, Oyo State

### **1.6 Specific Objectives**

1. To assess the level of knowledge of complementary feeding among married men in Ibadan South West Local Government Area of Ibadan, Oyo state
2. To determine the level of involvement in complementary feeding among men in Ibadan South West Local Government Area of Ibadan, Oyo state
3. To highlight factors influencing involvement in complementary feeding among married men in Ibadan South West Local Government Area of Ibadan, Oyo state
4. To determine the sources of information on complementary feeding available to married men in Ibadan South West Local Government Area of Ibadan, Oyo state

### **1.7 Research Hypotheses**

**H<sub>0</sub>:** There is no significant relationship between level of education of respondents and knowledge of complementary feeding

**H<sub>0</sub>:** There is no significant relationship between age of respondents and knowledge of complementary feeding

**H<sub>0</sub>:** There is no significant relationship between knowledge and level of involvement of respondents in complementary feeding

## CHAPTER TWO

### 2.0 LITERATURE REVIEW

#### 2.1 Overview of complementary feeding

The World Health Organization recommends that breastfeeding be continued until the child is two years or older as breast milk is an important nutritional component of children's diet (PAHO 2003). Breastfed children aged 12 to 23 months receive about 35–40 % of total energy from breast milk. Breast milk therefore makes an important contribution to the nutrient needs of young child, especially concerning protein, essential fatty acids and many vitamins. After six months however, the nutrient demands of children can no longer be met by breast milk alone (PAHO 2003). This is because breast milk is often low in minerals such as iron and zinc, hence they must be received from complementary foods.

The appropriate consistency of complementary foods for certain age is based on child's neuromuscular and motor development and teeth eruption. Most children after six months of age are developmentally ready for other foods (Naylor & Morrow 2001). They are able to eat pureed, mashed and semi-solid foods and introduced gradually to the family diet. Food consistency should be increased as the child gets older. By the age of eight months, most children are able to eat "finger foods" such as foods that are chopped to small pieces. At the age of 12 months children can usually begin eating family foods (PAHO 2003). Infants have very different nutritional needs from adults. They double their birth weight in the first six months and triple it by the end of the first year and therefore have higher requirements for energy and certain key vitamins and minerals than adults, relative to their size. To meet these high nutrient requirements, infants need to consume energy-dense and nutrient-dense foods (Cowbrough, 2010).

The small gastric capacity of the young child also limits the amount of food that they can consume during each meal therefore, infants should be provided with frequent, small, nutrient dense feeds throughout the day. Even with recommended breastfeeding practices after six months, infants will become stunted if they do not receive sufficient quantities of quality complementary foods (Black et al.,2008, PAHO 2003). Excessive diluting of foods should be avoided as it increases the quantity of foods too large for small children (Umeta et al. 2003). The energy density of complementary foods should, however, be adequate and not too high,

as meals with high energy density might decrease the daily breast milk consumption (Islam, Khatun, Peerson, Ahmed, Mollah and Dewey, 2008).

WHO recommends that children aged six to eight months should be given complementary foods two to three times a day, and additionally one or two nutritional snacks, if desired. From nine months onwards, children should be given three to four meals a day with snacks (PAHO 2003). However, adherence to this recommendation is low. According to a meta-analysis of data from developing countries, only half of caregivers of six to eight-month-old children reported that they had given complementary foods to their children during the previous day (Arabi, Frongillo, Avula and Mangasaryan 2012).

High dietary diversity of complementary foods is important for ensuring adequate nutrient intake (Arimond&Ruel 2004). Children may lack essential nutrients if their diets are limited with animal source foods (Krebs 2007) or have a high content of anti-nutrients, such as phytates and polyphenols, which are common in plant-based diets (Gibson, Bailey, Gibbs and Ferguson, 2010). Therefore, WHO recommends that meat, poultry, fish or eggs should be eaten daily or as often as possible (PAHO 2003). Also vitamin A-rich fruits and vegetables should be eaten on daily basis. Furthermore, foods should contain enough soft fat. If needed, children can be given vitamin-mineral supplements or fortified products.

The effect of micronutrient intakes on stunting has also been a matter of debate. Low intake of zinc has been associated with growth retardation (Imdad&Bhutta 2011), but the effect of vitamin supplementation on growth has yielded contradictory results. Cross-sectional studies have shown vitamin A deficiency to be associated to a greater risk of stunting, but studies on causal relation between vitamin A status and growth have not been published (Ramakrishnan, Nguyen and Martorell, 2009). Multiple micronutrient interventions with a minimum of three micronutrients have shown small but promising effects on linear growth. Micronutrient supplementation may be an effective intervention to reduce stunting, along with more comprehensive strategies such as improving diet, exclusive breastfeeding and complementary feeding practices (Bhutta, Ahmed, Black, Cousens, Dewey and Giugliani, 2008).

## **2.2 Guidelines of complementary feeding**

This section presents key guidelines of complementary feeding: a) frequency of feeding and amount of foods fed to the infants b) nutritional and energy density of the foods/dietary diversity of complementary foods c) timely introduction of complementary foods and, d) hygiene and safety of foods.

### **2.2.1 Frequency of feeding and amount of food fed to the infant**

A key indicator of adequate complementary feeding is the frequency of feeding. The stomach capacities of infants are small, and so they need to eat small frequent meals that are energy and nutrient dense. The quantities fed per meal should be gradually increased with age. (Serge, 2001) The WHO recommends that breastfed children 6-8 months old be fed 2 times per day and those 9-23 months old be fed 2-3 times per a day while the non-breastfed ones be fed 4 times per day (WHO, 2007). If energy content or the amount of complementary foods per meal is low, or if the infant has been completely weaned, a higher frequency of meals may therefore be necessary. Adequate energy intake can be achieved with fewer meals if the energy density of the food is increased (Islam *et al.*, 2008). However, normally young children eat at the same times as adults in most households: the frequency at which a child eats is the same as the number of meals eaten in the household, and it varies by region and season (Namugumya *et al.*, 2010)).

It should be noted also that complementary foods are not supposed to replace (but complement) breastfeeding. The frequency of breastfeeding should be maintained: the infant will naturally begin to nurse less with the introduction of complementary feeding. Therefore, the number of meals should be managed so as not to substantially reduce the amount of breast milk ingested by the infant. Nutritious snacks on the other hand are time-saving and contribute less to milk displacement (Monte and Giugliani, 2004).

### **2.2.2 Nutritional and Energy Density of the foods / Dietary diversity of complementary foods**

Lack of nutrient-dense complementary foods is one of the common factors accounting for decline in satisfactory growth pattern in children (Lartey, Manu, Brown, Peerson and Dewey, 1999). Energy and nutrient density depends on the kinds of foods and processes used for preparing them (Serge, 2001). Many of the traditional complementary foods used in resource poor settings are low in energy and nutrient density (Laswai and Kulwal, 2010). The family foods usually fed to the child are sometimes unsuitable for infants for much more obvious reasons such as beans having thick skins or fish having bones. In such situations a common practice is to serve the flavorful soup of a stew and restrain the other ingredients (Namugumya *et al.*, 2010). Staple foods are bulky and less nutrient dense thus infants would need to consume large quantities in order to get adequate energy and nutrients, which is difficult because babies have small stomachs (Islam *et al.*, 2008).

Also, complementary feeds in most resource scarce settings lack diversity. Variety in complementary foods however increases the chances of the infants meeting the nutrient

needs. A diverse diet is likely to provide a variety of nutrients thereby making it healthy. The WHO (2007) recommended minimum dietary diversity for children 6-23 months old is the consumption of foods from  $\geq 4$  groups out of 7. The consumption of foods from at least 4 food groups therefore means that the child has a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable that day, in addition to a staple food (grain, root or tuber). (WHO, 2007).

### **2.2.3 Timely introduction to complementary foods**

WHO recommends exclusive breastfeeding for 6 months and introduction of complementary foods at 6 months of age with continued breastfeeding (PAHO/WHO, 2003). The time of introduction and type of complementary food given to an infant are very important for the child's nutritional status. According to current recommendations (WHO, 2007), complementary feeding should be introduced into the child's diet at the age of 6 months. Early introduction of complementary foods increases infant morbidity and mortality while late introduction of complementary foods is harmful to the health of the baby, because infant growth stops or slows down and the risk of malnutrition and micronutrient deficiency increases (PAHO/WHO, 2003). In most cases, mothers practice early complementary feeding. Earlier introduction of complementary foods does not necessarily improve the child's growth instead the foods tend to displace breast milk, and have clear negative effects on child health (incidence of diarrhoea) and thus ultimately on child survival (Simondon and Simondon, 1997).

### **2.2.4 Hygiene in preparation and storage of complementary foods**

Contaminated complementary foods are the major route of transmission of diarrhoea among infants (Simondon and Simondon, 1997) and the higher incidence of diarrhoea coincides with the increase in the intake of these foods. Maternal practices regarding the management, preparation, administration and storage of complementary foods may reduce their contamination (Monte, 1993). Safe food hygiene practices include the following: those who handle the food during preparation or feeding should wash their hands properly with soap and water, after using the toilet and before meals, the infants hands should be washed likewise; kitchen utensils and cooking surfaces should be kept clean; a meal should be prepared and served immediately after preparation; the infant should be fed from a glass, cup or plate and spoon and an infants should not be given leftovers from the previous meal; and, if using a fridge, it should be cleaned regularly and any spoilt foods should be thrown away



immediately also, the use of feeding bottles which are difficult to keep clean should be avoided. (WHO, 2006b)

### **2.3 Bottle feeding in complementary feeding**

Complementary foods should be given using a spoon and cup/ glass (PAHO/WHO, 2003). Baby feeding bottles should be avoided because, in addition to being an important source of contamination for the infant, they interfere with oral dynamics (WHO, 2001). The tendency to use the bottle increases in relation to child's increasing age. A study by Shamin et al (2006), about infant feeding practices including the use of bottle and their determinants, from economically underprivileged mothers in a Peri-urban area of Karachi, Pakistan, showed that only 17% of the infants under the age of 3 months were offered bottle, 69% between 4 to 6 months increased to 76% in infants from 7 months to 1 year. The continued practice of bottle feeding is a concern because of the possible contamination leading to higher morbidity rates in children.

### **2.4 Malnutrition and complementary feeding in West Africa**

Importance of complementary feeding is emphasized by recognition not only that approximately 50% of all childhood mortality is directly or indirectly related to malnutrition, but also that the first 2 years of life represents a critical window of vulnerability according to foetal/early childhood origin hypothesis (Eriksson, 2005). The first 1000 days of a child's life, from conception to 24 months of age, are the most vulnerable period to the risk of malnutrition and also to the long-term effects of malnutrition. Lack of appropriate feeding can set up risk factors for ill-health. The life-long impact may include poor school performance, impaired cognitive ability, impaired intellectual and social development, poor mental development, chronic diseases with greater effect on morbidity and survival, and on productivity (USAID, 2012; Nestel, Briend, de Benoist and Decker, 2003). Inadequate intakes of dietary energy and protein and frequent infections are well-known causes of this growth retardation (NamugumyaRuzaaza, Mwadime, Suthuraman and Okello, 2010).

Protein-energy malnutrition among children is the major health challenge in developing countries, particularly Nigeria (FAO, 2001). This nutrition problem is also ascribed to inappropriate complementary feeding practices, low nutritional quality of traditional complementary foods and high cost of quality protein-based complementary foods (FMOH, 2005; Alozie, Iyam, Lawal, Udofia and Ani, 2009; Eka, Abbey, Akaninwor and Jo, 2010).

Most benefits of nutrition on development however could be got if malnutrition was prevented during this period thus, nutrition in the early years of life is indeed a major determinant of growth and development and also influences future adult health.

In Africa, suboptimal infant feeding practices and poor quality of complementary foods are among the major determinants that contribute to the high mortality among infants and young children (Lartey, 2008). In most West African countries, the period of complementary feeding formerly referred to as 'weaning' can be a period of problems and vulnerability for the survival of a child. Among mothers or caregivers of these regions, there's usually early supplementation with solid foods or early introduction of weaning foods of low nutrient quality (Onafiok and Nnanyelugo, 1992). In Nigeria, the first solid and most popular complementary food introduced to a child is usually a thin gruel called by different names depending on the tribe of the people. These thin gruels are usually called pap, ogi (among the yorubas), akamu (among the igbos) or koko (among the Hausas). This is usually made from maize (*Zea mays*), common millet (*Panicum glaucum*) or guinea corn (*Sorghum spp*) (King and Ashworth, 1987). However, these cereal-based traditional complementary foods in Nigeria and other family diets (cassava, yam, rice, amala, etc) may not be beneficial to the growth and development of the children (Eka et al., 2010).

## **2.5 Factors affecting complementary feeding**

Decisions on feeding practices and quality of complementary food being fed to the young child are often guided by multiple of factors. The main factors are likely to include a) beliefs on feeding, which are based on culture, comments and information from peers and relatives, b) knowledge on infant feeding c) perception that the infant needs additional foods to counteract signals of hunger, reduce crying and be able to sleep throughout the night d) the health of the child or mother may also influence the kinds of foods given, the amounts and frequency of feeding, e) lack of maternal time and resources needed to prepare food for the infant and young child.

### **2.5.1 Knowledge about complementary feeding**

A study conducted among a group of black women revealed that big infants are considered to be healthy and solids are regarded as having more nutritional value and ability to satisfy infants, compared to formula (Black, Siegel, Abel and Bentley, 2001). Many women introduce solids late to infants so as to use the prolonged exclusive breastfeeding as a family planning method while mothers from high-income groups believe that milk is complete food and so milk and milk products are given to children in 6-12 months instead of semi-solids

(Agostoni, Decsi, Fewtrell, Goule, Kolacek, Koletzko, Michaelsen, Moreno, Puntis, Rigo, Shamir, Szajewska, Turck and Goudoever, 2008).

Urban mothers, the high income groups who are more educated and informed on good infant feeding were found to delay the introduction of other foods at 5-6 months compared to rural mothers at 1-2 months (Shamima, 2010).

The early introduction of complementary food to infants has also been reported to be associated with low maternal age, younger or primiparous mothers were not more likely to perceive their infant to be hungry than older or multiparous women (Scott, Binns, Graham and Oddy 2009). This is probably due to their low knowledge on infant feeding.

### **2.5.2 Seasonality and appropriate processing and preservation technologies**

Having the right foods at the household level, either because they are produced or because they are purchased in the market is not enough; people need to know how to process and store excess food for off seasons. Traditional food processing techniques can therefore be employed for this purpose because they contribute enormously to food availability in households (Aworh, 2008). Some of the processing and preservation techniques which are employed in making complementary foods include; dry milling, wet milling, smoke drying and fermentation used to extend shelf of the food and prevent spoilage.

### **2.5.3 Peer and relatives pressure/cultural/traditional beliefs**

Many infants even in developed countries receive solid foods (often cereal mixed with formula in a bottle) and liquids other than formula or breast milk in the first few weeks of life (Tatone-Tokuda, Dubois, Manon and Girard, 2009, Black *et al.*, 2001). Decisions on early feeding are often guided by family members like grandmothers, sisters or even spouses and influenced by beliefs that infants need complementary food to counteract signals of hunger, reduce crying, and sleep through the night (Black *et al.*, 2001).

However, early complementary feeding does not increase the likelihood of nighttime sleeping and may increase the likelihood of feeding disorders, especially if parents introduce developmentally inappropriate food or feeding techniques before children have acquired the necessary neuromuscular skills. Low-income young mothers are a particularly vulnerable group because they have little experience themselves and are often dependent on their mother (infant's grandmother) for guidance (Black *et al.*, 2001).

Grandmothers play important roles in infant feeding decisions, particularly related to the early introduction of complementary foods though they could also be bad influence especially in terms of encouraging some undesirable child feeding behaviors (Black *et al.*, 2001, Sharma and Shuddaba, 2006). Cultural issues also influence nutrition of infants since the distribution

of food and food taboos are culturally determined along age and gender lines. In western Uganda fruits were regarded as food for the children hence enabling them to get the vitamins, minerals and other nutrients they require, while among the Karamajong, a pastoral community in north eastern Uganda, the culturally accepted food is milk in blood and sorghum therefore an infant will have to eat that or be introduced much later to complementary foods (Byaruhanga and Opedun, 2008).

#### **2.5.4 High Maternal Workload**

The presence of maids in homes in developing countries has contributed to a decline in breast-feeding and a significant increase in bottle-feeding. The duration of breast-feeding is shorter and bottle feeding is introduced earlier. This problem was observed to be more evident among educated mothers who are usually working and are separated from their infants for long periods (Al-Awadi, and Amine, 1997). The place of residence also affects the age of introduction of solid foods, with urban mothers introducing these at an earlier average age than mothers residing in rural regions. This could be due to the fact that rural mother's breastfeed for a longer duration and hence delay the introduction of foods/fluids (Batal, Boulghourjian and Akik, 2010).

#### **2.6 Consequences of inappropriate complementary feeding practices**

Poor complementary feeding practices lead to an increased risk of infections and impaired development and growth, also called *stunting*. Stunting occurs when a child does not grow adequately to meet his height potential. A child is thus considered to be stunted and chronically malnourished if his height-for-age is below two standard deviations of the WHO's child growth standard median (WHO 2006). Globally, in 2011 165 million children under the age of five were stunted (Black et al. 2013) with the highest prevalence of stunting being Africa where around 36% of children under the age of five are stunted. However, the largest number of stunted children is found in south-central Asia.

There is strong evidence that stunting has both short and long-term health consequences (Black et al. 2013). Stunting can begin in utero and continue for the first two years after birth. Most of stunting however occurs in the period of complementary feeding from 6 until 24 months of age (Victora et al. 2010). Poor nutritional status and infections form a vicious cycle. Malnutrition increases the risk of infections by its negative impact on the epithelial barrier function and altered immune response (Brown 2003). Infections on the other hand may impair the nutritional status through impaired absorption of nutrients, reduced appetite,

increased catabolism and direction of nutrients towards immune response, taking away from growth (Stewart et al. 2013, Brown 2003).

Stunted, underweight and wasted children have an increased risk to die from infectious diseases such as diarrhoea, pneumonia and measles. In 2011, child undernutrition, including foetal growth restriction, suboptimal breastfeeding, stunting, wasting and deficiencies of vitamin A and zinc, was globally responsible for 45 % of deaths in children younger than five years, accounting for a total of 3.1 million deaths (Black et al. 2013). In addition to increased mortality and morbidity, short-term consequences of stunting include increased household expenses for the care of a sick child which can put a strain on the household income (Stewart et al. 2013).

Besides shorter height at adulthood, stunting can also lead to reduced lean body mass, less schooling, poorer intellectual capacity, reduced earnings and lower birth weight of infants born to women who were stunted in their childhood (Victora et al. 2008). Some of the adverse effects of stunting are irreversible and permanent, thus interventions should be carried out when most of stunting occurs. The 'window of opportunity' for stunting prevention begins from the period of pre-conception to pregnancy and until the first two years of a child's life (Bhutta et al. 2013, Victora et al. 2010, Dewey & Adu-Afarwah 2008) hence it becomes necessary to explore means of enhancing appropriate complementary feeding practices for infants during the complementary feeding period when most stunting occurs through assessing the knowledge and involvement of fathers in the complementary feeding process.

## **2.7 Fathers' Role in Complementary Feeding**

Fathers' role in complementary feeding has not been studied extensively. In traditional non-Western societies, the father is often seen as "the head of the household" who makes most decisions about day-to-day matters. However, a review by Aubeil (2012) suggests that men do not have lot of decision-making power over child care and nutrition, because they lack experience in this domain. According to Aubeil, on the micro-level of the household, the older women are the leading authorities. Men are usually the *advisees* rather than *advisors*, since senior women both advice and make demands on their sons and sons-in-law (Aubeil 2012).

Fathers might not make daily decisions about child care and feeding, they are however an important source of emotional, informational and economic support for mothers. This can be seen in studies regarding the promotion of breastfeeding that successful programs have included fathers and other non-maternal caregivers into the activities (Piwoz et al. 2003).

A study conducted by Brunson, Shell-Duncan and Steele (2009) revealed female income to be a predictor of better child nutrition. This may be because women are often more likely to invest in the basic food and healthcare needs of their children and also prioritize these needs above other needs. Men in contrast invest more often in themselves or in the worth of their households. Men and women may therefore have conflicting priorities concerning the use of resource within the household despite the fact that they could provide financial support for each other.

Also, in most cultures, child feeding is primarily the task of women however, men can indirectly contribute to complementary feeding decision through controlling household cash and food purchasing (Mwangome, Prentice, Plugge and Nweneka, 2010). Moreso, sometimes the task of food purchasing is also allocated to men, limiting the control women have over food choices (Rasheed, Haider, Hassan, Pachon, Islam and Jalal, 2011) ensuring good nutrition for both the children and the family at large.

## **2.8 Barriers to male involvement in complementary feeding**

A number of factors have been identified to inhibit male involvement in infant feeding. In a study conducted in Zambia, social cultural factors in relation to gender roles were seen to be barrier to male involvement (Nguni, 2013). Similarly, a study conducted in Uganda in which both men and women said that taking care of a child such as taking a child for immunization was a mothers' role indicated that gender norms were a barrier to male involvement in child care. Also, men are faced with stigma and are perceived as weaklings when seen to be taking their children for routine care such as growth monitoring (Nguni, 2013).

In a Zambian study, lack of knowledge has also been implicated as a factor affecting male involvement. The study concluded that fathers are influencers in infant feeding decisions but lacked the necessary knowledge on the same (Magawa, 2012). Findings also revealed lack of time as another barrier affecting male involvement in child care (Carter, 2002). This may be due mainly to the long working hours or commitments at work that men encounter. These findings are supported by Nkuoh, Meyer, Tih and Nkfusai (2013) who also established lack of time as a barrier.

Some barriers are also related to the health care system. Lack of a male friendly environment at health care institutions impedes male involvement as confirmed by Nyondo, Chimwaza and Muula, (2014). Similarly, Reece, Hollub, Nangami, and Lane, (2010) also established the same.

To improve fathers ‘and mothers’ knowledge, behaviour and involvement in optimal complementary feeding practices; peer/family support, adequate information (knowledge) and skills and behavior change communication in their communities becomes important and must be emphasized (Egata, Berhane and Worku, 2013).

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## 2.9 Theoretical and Conceptual Framework

In order to gain proper understanding into this study, PRECEDE Model was utilised.

The PRECEDE model is a planning model which offers a framework for identifying intervention strategies to address factors linked to the outcomes of interest. It does not however predict or explain the factors. It was developed by Green, Kreuter, and associates. The model provides a road map for designing health education and health promotion programs. The model views health behavior as influenced by both individual and environmental forces. It guides planners through a process that starts with desired outcomes and works backwards to identify a mix of strategies for achieving objectives.

The PRECEDE acronym stands for Predisposing, Reinforcing, Enabling Constructs in Educational/ Environmental Diagnosis and Evaluation. Developed in the 1970s, this component of the model thus posits that an educational diagnosis is needed to design a health promotion intervention, just as a medical diagnosis is needed to design a treatment plan. This model assumes that since the health promoting behaviours and activities that individuals engage in are almost always voluntary, carrying out health promotion has to involve those whose behaviour or actions we want to change.

Application of this model is a participatory process involving those affected by the issue in question and all stakeholders. Its relevance to this study is shaped by the explanation of this model that health is by nature a community issue, it assumes that health is an integral part of a larger context and it is within that context that it must be considered and also that health is more than physical wellbeing, it is a constellation of factors – economic, social, cultural, ecological and physical which explain health behaviours and actions thereby affecting quality of lives of individuals, families and communities. Also according to the framework, any behaviour is caused by some behavioural antecedents which are categorized into predisposing, enabling and reinforcing. The Precede Model was useful in classifying the factors influencing knowledge and involvement in complementary feeding, ascertain the possibility of initiating and sustaining male involvement in complementary feeding through the enabling factors and the provision of reinforcement through encouragement, incentives and social support from peers and family.



To understand knowledge and involvement of men in complementary feeding, the four assessment of PRECEDE phases was undertaken as follows:

**Phase 1:** Identifying the ultimate desired outcome - Investigating knowledge and level of involvement of men on complementary feeding

**Phase 2:** Identifying factors and issues that may affect the outcome such as environment and behaviours peculiar to the male gender

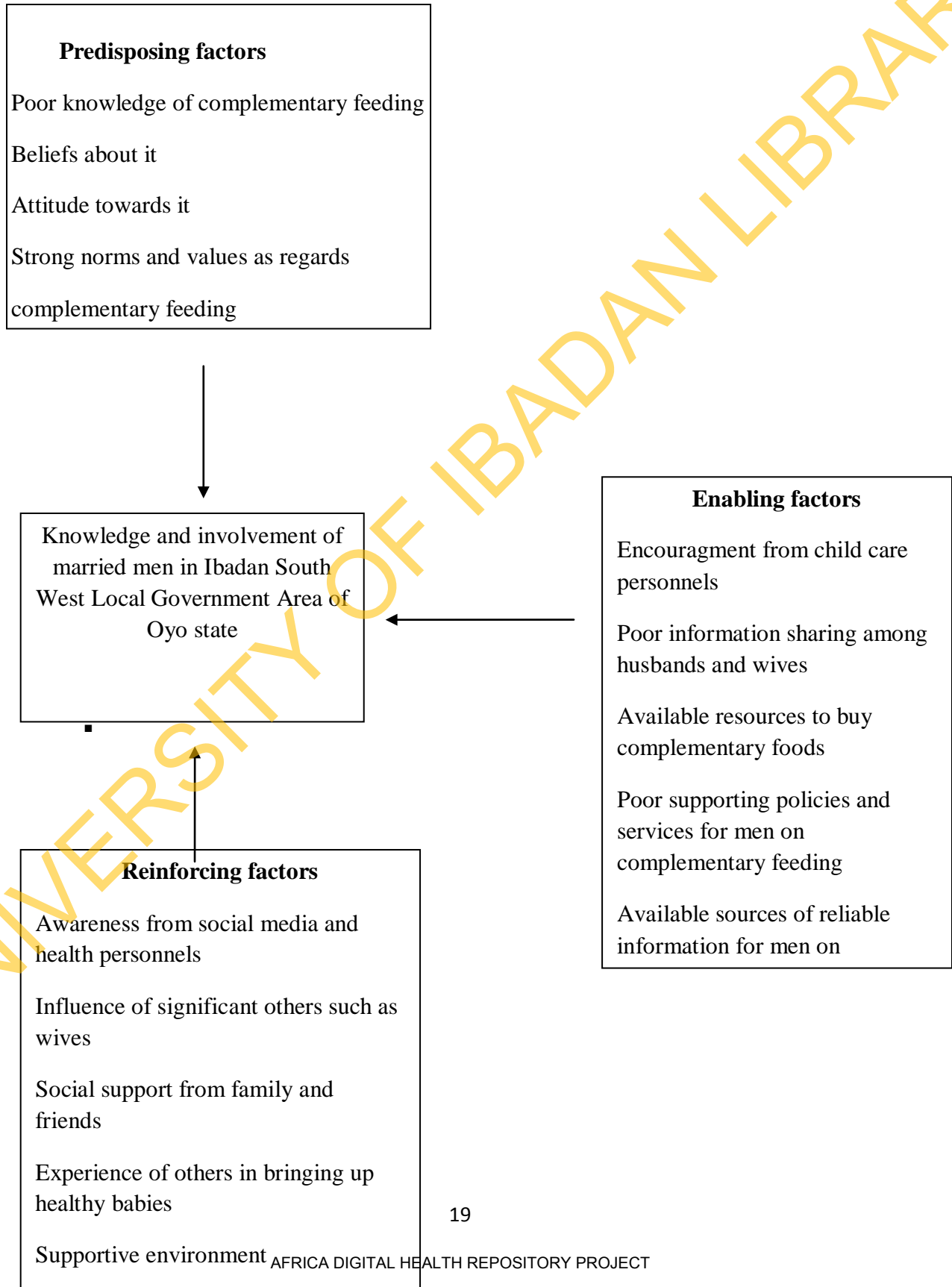
**Phase 3:** Identifying predisposing, enabling and reinforcing factors that affect behaviour of respondents and the environment at large.

Predisposing factors to complementary feeding identified among men include knowledge on complementary feeding, beliefs about it, their attitudes towards it, their values and cultural norms. Enabling factors which could enable the men to act on their predispositions include available resources to provide for the mothers of the young children, presence or absence of information, sources of information for becoming knowledgeable about complementary feeding, supportive policies and services all of which have the potential of encouraging men to be involved in complementary feeding and influencing their knowledge then the reinforcing factors which may encourage repetition or persistence of male involvement in complementary feeding include factors such as healthy babies as a result of appropriate complementary feeding, social support from peers and family, influence of significant others such as praise from their wives or other women, supportive environments and incentives.

**Phase 4:** Identifying the administrative and policy factors that influence what can be implemented.

## APPLICATION OF PRECEED MODEL TO THE STUDY

### Conceptual Framework



**Fig 2.1: Illustration of the PRECEDE model: Adapted from Kreuter (1999)**

## **CHAPTER THREE**

### **3.0 RESEARCH METHODOLOGY**

#### **3.1 Study Design**

A descriptive cross sectional study design was used in order to explore knowledge and level of involvement in complementary feeding among men in Ibadan South West Local Government Area, Oyo state.

Data was collected using a semi-structured questionnaire. Part one was related to demographic characteristics of respondents (age, marital status, religion, number of children, occupation) and part two consisted of questions about respondents' knowledge and involvement in complementary feeding.

#### **3.2 History of the study area**

Ibadan South West Local Government area of Oyo state was carved out of the defunct Ibadan Municipal Government (IMG) in 1991. The administrative headquarter located in Oluyole estate, Ring-road, Ibadan. The Local Government is bounded in the west by Ido local government, bounded in the east by Ibadan North and Ibadan South East local government, bounded in the north by Ibadan North West and Ido local governments and finally bounded in the south by Oluyole local government.

The area is an urban centre hence there are no serious farming activities in the area. Most of the agricultural products planted outside the area are being processed in the Local Government Area. The Local Government is a home for small, medium and large scale industries with majority of the industries being located in Oluyole estate, Ibadan. Among them are Yale Foods Nigeria Limited, 7up bottling company, Sumal foods Nigeria Limited, NNPC Apata, FunmanApata, Niger hygiene, Lagos bypass Oke Ado amongst others.

#### **3.3 Study site**

This study was carried out in Ibadan South West Local Government Area of Oyo state.

This study site was selected due to its high density and urban nature. It is believed that due to its urban nature, men in this area might have prior access to health related information. Also, because this research targetted men in their specific workplaces, this local government was selected as the inhabitants are also highly enterprising due to the concentration of industries

and is in fact the local government with the largest number of industries in Oyo State. The local government is reputed to be the most potentially viable Local Government in Oyo State because bulk of the industries lies within this local government in the whole of Oyo State. Also, only few studies have been conducted in this local government on male involvement in child care and nutrition hence the reason for its selection for the study.

### **3.4 Study Population**

The study population consisted of married men in selected communities and wards of Ibadan South West Local Government area of Oyo state.

#### *3.4.1 Inclusion criteria*

1. Respondents must be male and married
2. All respondents that fill and sign the consent form will be included in this study.

#### *3.4.2 Exclusion criteria*

1. All females and unmarried men
2. All respondents who are unwilling to participate in this study will be excluded from this study
3. Incomplete questionnaires will also be excluded from the study

### **3.5 Sample Size Determination**

To calculate the sample size to be used for this study, the formula to calculate the sample size of one group was used.

$$N = \frac{Z\alpha^2 P(1-P)}{D^2}$$

Where;

$Z\alpha$  = significant level usually set at 95% confidence level,  $Z\alpha$  is 1.96 (two sided)

P = Prevalence of the attribute under study

D = Margin of error tolerated (usually set at 0.05)

In the course of carrying out this study, a prevalence of 21.9% was drawn from a similar study carried out by Oyewole, 2011 on male participation in childcare and development.

Thus, applying the formula, we have:

$$N = \frac{1.96^2 * 0.219(1-0.219)}{(0.05)^2}$$

$$N = \frac{3.8416 * 0.219(0.781)}{(0.05)^2}$$

$$N = \frac{3.8416 * 0.219 * 0.781}{0.0025}$$

$$N = \frac{0.65706}{0.0025}$$

$$N = 262.8 \sim 263$$

To cater for non response, 10 % of the sample size would be added which is equal to 263 plus 26.3 = 289.3  $\approx$  290.

Therefore, the determined sample size for this study was 290.

### 3.6 Sampling Technique

A multi-stage sampling technique was employed in this study to select 290 respondents from the target population of men in Ibadan south west local government:

1. The local government area was stratified into twelve (12) wards
2. Six (6) wards were selected by balloting from the twelve (12) wards
3. Each of the communities in each wards selected were then stratified into three different categories: peripheral, transitory and innercore
3. Thirty –four (34) communities were selected from the wards after stratification
4. Proportionate sampling was used to select number of respondents required in each communities i.e  $290/34 = 8.5 \sim 9$  respondents in each community
5. Random sampling was used to select the required number of respondents in each community

### 3.7 Study Instrument

Data was collected using an interviewer administered semi-structured questionnaire. The questionnaire was developed using information gotten from literatures on knowledge and involvement of men in complementary feeding. The questionnaire was divided into five sections; section A was designed to collect personal/sociodemographic information of the

respondents, section B contained questions on knowledge of complementary feeding using a 29 points knowledge scale, section C contained information on level of involvement in complementary feeding using a 20 points scale, section D was used to assess factors affecting knowledge of respondents of complementary feeding and section E contained questions on sources of information about complementary feeding.

### **3.8 Validity of Instrument**

A draft of the questionnaire was developed in English language. The questions were put together from information gathered from relevant literatures guided by the research objectives. The instruments was further validated by giving them out to research supervisor, lecturers and peers in the department for review and corrections.

### **3.9 Reliability of Instrument**

Reliability of the instrument was ensured by conducting a pre-test among 10% of men from Ibadan North Local Government Area with a draft questionnaire in order to determine the effectiveness of the developed instrument in collecting appropriate data relevant to the research objectives. Reliability analysis for the questionnaire was done using cronbach-alpha statistical test.

The pre-test enabled the investigator to determine whether the questions were clear and simple enough to be comprehended by the respondent. It also allowed the researcher to become familiar with the items on the questionnaire. A reliability coefficient of 0.69 was obtained. This was interpreted as reliable because the correlation coefficient was greater than the average correlation coefficient of 0.5. Ambiguities or deficiencies observed after the pre-test were corrected prior the survey.

### **3.10 Recruitment of research assistants**

Six research assistants (RAs) were recruited and trained for this study. The candidates were fluent in both english and yoruba language. During the training, they were guided through the different sections of the research instrument. They were also taught how to ask questions without causing anyharm whatsoever to the respondents. The RAs were taught how to obtain informed consent from respondents and how to obtain valid data. They were also taught how to rview administered questionnaires for completeness after an interview session.

### **3.11 Procedure for data collection**

Data collection took place between September and October, 2016 after the training of research assistants. The training of the research assistants was on how to politely require

informed consent from the respondents, proper administration and collection of the research instrument and assurance of confidentiality and anonymity.

A letter of introduction was collected and consent was gotten from the head of department of Health Promotion and Education as a proof to the respondents if requested. Semi-structured questionnaire was employed. Prior to the administration of the research instrument, the consent of the respondents was sought and the proposed-use of the questionnaire was mentioned.

All administered questionnaires were thoroughly examined for completeness by principal investigator and research assistances after collection. A total of 290 questionnaires were administered to eligible respondents (Married men) at various workplaces in the selected communities of Ibadan South West Local Government Area.

### **3.12 Procedure for Data Analysis and management**

All copies of the administered questionnaires were retrieved, collated and reviewed to ensure consistency and completeness. Serial numbers were assigned to the questionnaires administered for easy identification, correct data entry, analysis and recall of any instrument with one problem or the other. A coding guide was developed for each question into the computer, cleaning, recording and coding of data for analysis. Data entry, scores, descriptive statistics and multiple response analyses were done using Statistical Package for the Social Sciences (SPSS version 20).

Frequencies and percentages were used to draw inferences from socio-demographic information provided by respondents and to analyze the percentage of respondents with knowledge and involvement in complementary feeding. Chi-square test was used for the categorical variables and to examine the association between independent variables i.e socio-demographic variables and dependent variables i.e knowledge or involvement in complementary feeding. The questionnaires were kept away from the reach of unauthorized persons in the computer system where they were locked with a password.

### **3.13 Ethical Consideration**

The ethical principle guiding the use of human participants in research was taken into consideration in the design and conduct of this study. Ethical approval for the study was provided by the Oyo State Ethical Review Committee Board and written informed consent was obtained before each respondent was asked to complete the questionnaire, the purpose of the study was explained and the questionnaire did not contain the name of the participants, thus confidentiality of the participants was maintained.

### **3.13.1 Confidentiality**

Names of respondents was not required, only identification numbers were assigned to the questionnaires for proper recording.

### **3.13.2 Beneficence**

Findings from this study will be published so that interested persons can have access to information on men's knowledge of complementary feeding thus serving as encouragement for all caregivers of infant and young children. This study can also provide relevant information for further intervention in this field.

### **3.13.3 Non-maleficence**

The research did not require collection of invasive materials therefore safety of the participants was guaranteed.

### **3.13.4 Voluntariness**

The participants had full detail of the research before taking part in it. They were not coerced in any form to participate and they were fully aware that they are at liberty to withdraw from the study without any penalties attached so as to ensure their willingness to take part in the study.



## CHAPTER FOUR

### 4.0 RESULTS

#### 4.1 Socio-Demographic Characteristics of Respondents

A total of 290 married men were interviewed and their socio-demographic characteristics are presented in table 4.1 below. The mean age of the respondents was  $39.0 \pm 8.4$  years. 46.2% of the respondents' ages ranged between 30 - 39 years while 11.0% had ages below 30 years. Only few respondents (0.4%) fall within the age range of 70 - 79 years.

Majority of the respondents (55.2%) have attained tertiary level of education, while 35.5% and 8.3% have completed their secondary and primary level of education respectively. Only 1.0% of the respondents do not have any formal education.

Most of the respondents were of Yoruba descent (85.9%), another 12.1% were Igbos. Other ethnic groups represented were Hausa (0.7%), Ebira (0.3%) and Urhobo (1.0%). A greater proportion of the respondents were Christians (61.7%), Muslims that participated in the study were 37.2% while the remaining 1.0% were traditional worshippers.

The mean number of respondents' children was  $3.0 \pm 1.8$ . Most respondents (77.2%) had between one to three children, 17.9% had between four to six children while 0.3% had as many as thirteen children. 44.8% of the respondents had children within the age range of 6 to 24 months. Over half of the respondents (53.2%) had children aged 25 months and above while some others (7.2%) had children aged 6 months and less. 78.6% of the respondents stated that they fed their children when they were within the age range of 6 months to 2 years; 21.4% said that they had not.

**Table 4.1: Socio-demographic characteristics of respondents****N=290**

Socio-Demographic Characteristics	Categories	Frequency (%)
Age Group of Respondents (years)	20-29	32 (11.0)
	30-39	134 (46.2)
	40-49	90 (31.0)
	50-59	26 (9.0)
	60-69	7 (2.4)
	70-79	1 (0.4)
Highest Educational Level Attained	Primary	24 (8.3)
	Secondary	103 (35.5)
	Tertiary	160 (55.2)
	No Formal Education	3 (1.0)
Ethnicity	Igbo	35 (12.1)
	Yoruba	249 (85.9)
	Hausa	2 (0.7)
	Ebira	1 (0.3)
	Urhobo	3 (1.0)

Religion	Christianity	179 (61.7)
	Islam	108 (37.3)
	Traditional	3 (1.0)

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Occupation	Civil servants	96 (33.1)
	Public servants	15 (5.2)
	Traders	118 (40.7)
	Artisans	44 (15.2)
	Others	17 (5.8)
Number of Children	1-3	224 (77.2)
	4-6	52 (17.9)
	7-9	9 (3.2)
	10-12	4 (1.4)
	13+	1 (0.3)
Do you have a child within the age range of 6 months to 24 months?	Yes	130 (44.8)
	No	160 (55.2)
Age of Youngest Child	6 months and less	21 (7.2)
	7 - 12 months	49 (16.9)
	13 - 18 months	23 (7.9)
	19 - 24 months	43 (14.8)
	25 months +	154 (53.2)
Ever fed your child within the age range of 6 months to 2 years before?	Yes	228 (78.6)
	No	62 (21.4)

#### 4.2 Knowledge of Complementary Feeding

The knowledge of respondents on complementary feeding is shown on table 4.2 and figure 4.1 below. Only 0.4% of the respondents were able to give a correct definition of

complementary feeding as "Other foods or drinks given to infants in addition to breast milk". Majority of the respondents (91.0%) gave varying wrong answers while 8.6% gave incomplete answers. Correct responses to the types of food that make up a complementary food was given by 14.8% of the respondents and how complementary feeding complements breastfeeding was gotten by only 1.7% of the respondents.

The mean knowledge score of respondents on complementary feeding was  $9.1 \pm 3.3$ . Overall, 67.8% of respondents have poor knowledge of complementary feeding while 32.1% have good knowledge.

**Table 4.2: Respondents knowledge of complementary feeding**

**N=290**

Knowledge Questions	Frequency(%)
<b>Meaning of Complementary Feeding</b>	
Correct Answers	1 (0.4)
Incomplete Answers	25 (8.6)
Wrong Answers	264 (91.0)
<b>Target age range for complementary feeding</b>	
Correct Answers	34 (11.7)
Wrong Answers	256 (88.3)
<b>Two important food groups to be included in the composition of a complementary food</b>	
Correct Answers	86 (29.7)
Incomplete Answers	75 (25.8)
Wrong Answers	129 (44.5)
<b>The types of food that should be in an adequate complementary food</b>	
Correct Answers	43 (14.8)
Incomplete Answers	55 (19.0)
Wrong Answers	192 (66.2)
<b>Age to start Complementary feeding</b>	
Correct Answers	82 (28.3)
Wrong Answers	208 (71.7)
<b>How often a baby should be fed in a day</b>	
Correct Answers	40 (13.8)
Wrong Answers	250 (86.2)

**How complementary feeding complement breastfeeding**

Correct Answers	5 (1.7)
Wrong Answers	285 (98.3)

**Two ways of encouraging a child to eat complementary foods**

Correct Answers	94 (32.4)
Wrong Answers	196 (67.6)

**Two methods of maintaining hygiene when preparing complementary foods**

Correct Answers	102 (35.2)
Incomplete Answers	162 (55.9)
Wrong Answers	26 (9.0)

**Does commencing complementary feeding mean putting a stop to breastfeeding the child?**

Correct Answers	27 (9.3)
Wrong Answers	263 (90.7)

**Bottle feeding is better than feeding a child with cup and spoon**

Correct Answers	147 (50.7)
Wrong Answers	143 (49.3)

**Mothers are the only ones who should feed infants**

Correct Answers	68 (23.4)
Wrong Answers	222 (76.9)

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See the appendix for the list of correct answers to the knowledge questions

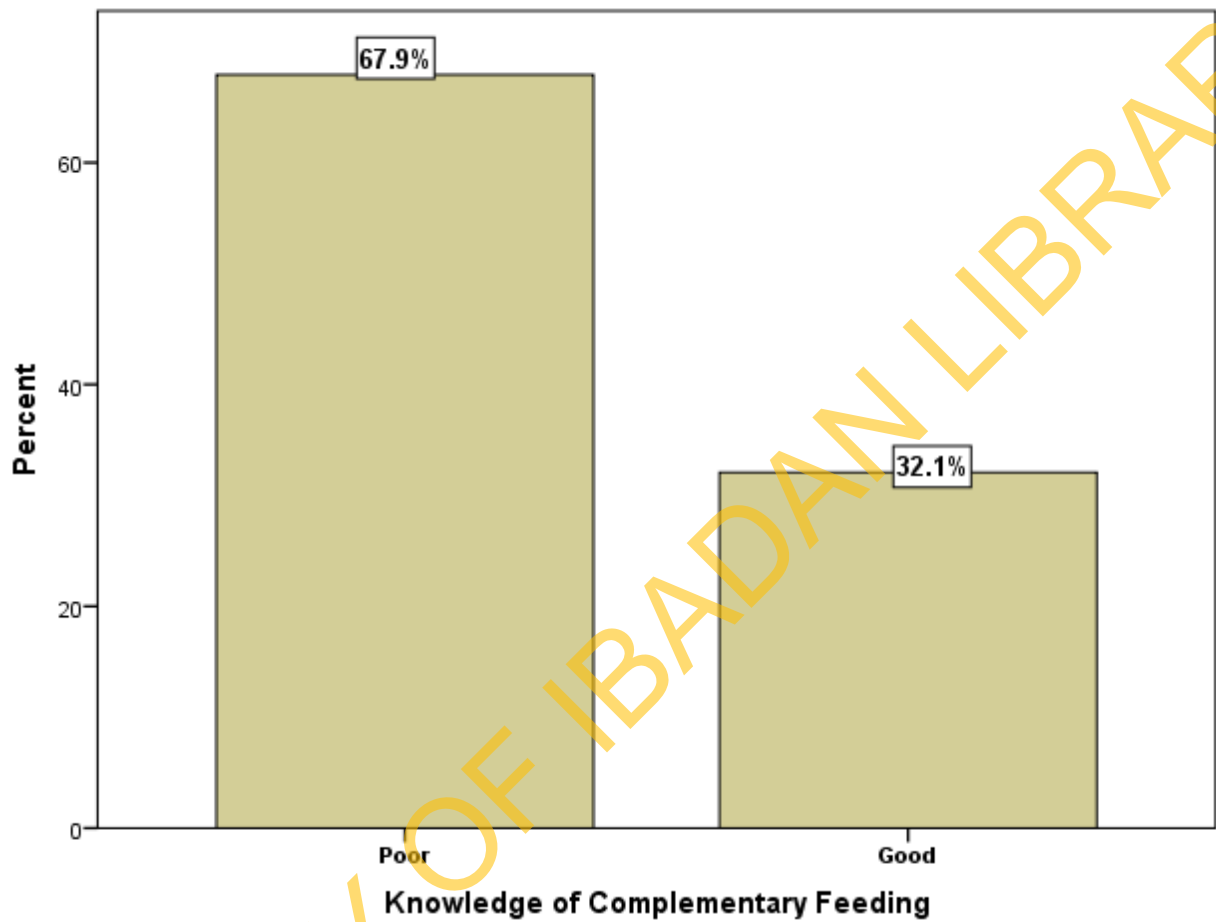


Fig 4.1: Knowledge of Complementary Feeding

#### 4.3 Level of Involvement in complementary feeding



Most of the respondents (93.8%) stated that they provide money to purchase complementary foods, 44.8% do not help in the preparation of complementary food while as high as 80.0% help in feeding their children.

73.8% of the respondents stated that they relieve their wives of household chores so that she could feed the children, sharing of information on complementary feeding by parents of the young children however was low as 27.2% of the respondents stated that they do not share such information among themselves. The mean score for involvement was  $12.2 \pm 2.4$  as shown in table 4.3b below.

**Table 4.3a: Level of Involvement in complementary feeding**

Statements	Frequency (%)
<b>I provide money to purchase complementary foods</b>	
Yes	272 (93.8)
No	18(6.2)
<b>I do not help in the preparation of complementary foods for children</b>	
Yes	130 (44.8)
No	160 (55.2)
<b>I help in feeding my children</b>	
Yes	232 (80.0)
No	58 (20.0)
<b>I do not help in cleaning up utensils for feeding when necessary</b>	
Yes	116 (40.0)
No	174 (60.0)
<b>I do not share information I get on complementary feeding with my wife</b>	
Yes	79 (27.2)
No	211 (72.8)
<b>I do not help to purchase complementary foods</b>	
Yes	78 (26.9)
No	212 (73.1)
<b>I encourage my wife to comply with complementary feeding guidelines for infants and young children</b>	
Yes	222 (76.6)

No 68 (23.4)

**I do not encourage family planning for child spacing**

Yes 118 (40.7)

No 172 (59.3)

**I relieve my wife of household chores so that she can feed the children**

Yes 214 (73.8)

No 76 (26.2)

**I ensure a healthy feeding environment for my infants and young children**

Yes 270 (93.1)

No 20 (6.9)

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**Table 4.3b: Level of involvement mean**

<b>N</b>	<b>Minimum</b>	<b>Maximum</b>	<b>Sum</b>	<b>Mean</b>	<b>Standard deviation</b>
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<b>Level of Involvement score</b>	290	6	20	3530	12.2	2.4
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#### **4.4: Factors Influencing Knowledge of Complementary Feeding**

As shown in table 4.4 below, various factors influenced the knowledge of respondents on complementary feeding. 56.9% of the respondents stated that the ease of access of

information influenced their knowledge while 47.2% stated that they learn about complementary feeding from their friends. Some others (43.8%) mentioned that they have come across information on complementary feeding in the course of their educational pursuits. However, 22.4% stated that only women should be concerned with complementary feeding.

**Table 4.4: Factors Influencing Knowledge of Complementary Feeding**

**n = 290**

Factors	Frequency (%)
Information on complementary feeding are easily accessible to me	
Yes	165 (56.9)
No	125 (43.1)
I follow my wife to health centre for child routine check up and immunization	142 (49.0)
Yes	148 (51.0)
No	
I spend limited time at home with the children because of my work	
Yes	157 (54.1)
No	133 (45.9)
Only women should be concerned with complementary feeding	
Yes	65 (22.4)
No	225 (77.6)
My friends already know about complementary feeding so I learn from them	
Yes	137 (47.2)
No	153 (52.8)
My wife sometimes discuss issues on complementary feeding with me	
Yes	218 (75.2)
No	72 (24.8)
I have come across complementary feeding before in the course of my educational pursuit	127 (43.8)
Yes	163 (56.2)
No	
My family background does not encourage me to be involved in complementary feeding	6 (2.1)
Yes	284 (97.9)

No

Encouragement from family and friends

8 (2.8)

Yes

282 (97.2)

No

Other people's mistakes and experiences

Yes

1 (0.3)

No

289 (99.7)

Unavailability of my child's mother

Yes

1 (0.3)

No

289 (99.7)

My position in the family made me to be responsible to cater for my younger ones while growing up

1 (0.3)

Yes

289 (99.7)

No

Times are changing and roles are now shared between husbands and wives

Yes

1 (0.3)

No

289 (99.7)

Men cannot feed children correctly

Yes

1 (0.3)

No

289 (99.7)

#### **4.5: Sources of Information on Complementary Feeding**

There are multiple sources of information for respondents on complementary feeding as can be found in table 4.5 below. Some of the sources stated by respondents include internet and hospitals (6.2%), Television (3.1%), Radio (5.2%). Some got information via friends (1.0%) and others while reading or in the course of their educational pursuits (0.3%). Information gotten from these sources vary from information related to hygiene (5.5%), examples of complementary foods (4.5%), the importance of complementary food (4.8%) etc.

The motivation to seek for information about complementary food as stated by respondents include knowing the best food to give to the baby (4.5%) amongst others.

**Table 4.5: Sources of Information on Complementary Feeding**



Variables	Frequency (%)
<b>Source of Information on Complementary Feeding</b>	
Internet and Hospital	18 (6.2)
Supermarket, Hospital and Friends	8 (2.8)
Hospital, friends, radio	13 (4.5)
Television	9 (3.1)
Hospital and media	8 (2.8)
Parents, government awareness through the media, internet	1 (0.3)
Radio	15 (5.2)
Reading and Education	1 (0.3)
Television and Radio	16 (5.5)
Friends and Nutritionists	3(1.0)
<b>Most preferred source of information on complementary feeding</b>	
Hospital	52 (17.9)
Radio	43 (14.8)
Self	4 (1.4)
Health Talk	2 (0.7)
Mother	8 (2.8)
Parents	6 (2.1)
Doctors	7 (2.4)
Family members	5 (1.7)
Internet	46 (15.9)

Wife	5 (1.7)
Food labels	2 (0.7)
Experienced people	6 (2.1)
Nutritionists	5 (1.7)
Peers	1 (0.3)

**Information respondents have ever come across on complementary feeding?**

Breast milk alone is not enough hence the need for complementary feeding to aid growth	14 (4.8)
That beans is good	13 (4.5)
How to feed children in a hygienic way	16 (5.5)
Complementary feeding is not the same as breastfeeding, it has a different function	3 (1.0)
Complementary feeding is good for the child and should start at 6 months	1 (0.3)
Infant formula should be reduced due to increased risk of cancer	1 (0.3)
Addition of water improves complementary foods	1 (0.3)
Every information	18 (6.2)
Information from the Radio, TV and Hospital	7 (2.4)
Knowing how to prepare baby's food and care for the children when their mother is not around	12 (0.4)
Feeding recommendations for my baby during and after the complementary feeding period	6 (2.1)
New and improved foods for healthy baby's brains	3 (1.0)
More technologies that we can use to improve infant feeding	1 (0.3)

### Motivation to seek information

To know the best food to give the baby and to test other products	13 (4.5)
Childbirth	10 (3.4)
To prevent childhood diseases	2 (0.7)
Number of children and experience of fatherhood	2 (0.7)
Other children in the neighbourhood looking healthier than my children so I want my children to look like them	4 (1.4)
Separation from my wife motivated me because I had to take care of my children myself	2 (0.7)
To assist my wife	2 (0.7)
To have a big baby	2 (0.7)
How to reduce feeding cost	2 (0.7)
Nothing much, its normal to seek knowledge	1 (0.3)

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#### 4.6 Test of hypotheses

**Hypothesis 1-** There is no relationship between level of education of respondents and knowledge of complementary feeding

The result of the relationship between level of education of respondents and knowledge of complementary feeding is shown in Table 4.6 below. It was observed that the difference between the level of education of respondents and knowledge of complementary feeding was not statistically significant ( $X^2=1.882$ ,  $P>0.05$ ).

Since the P-value is greater than 0.05, the hypothesis is accepted and thus, there is no significant relationship between level of education of respondents and knowledge of complementary feeding. From the result, it could be seen that level of education does not have any significant influence on complementary feeding.

**Table 4.6 Relationship between level of education of respondents and knowledge of complementary feeding**

**H<sub>0</sub>:** There is no significant relationship between level of education of respondents and knowledge of complementary feeding

Level of Education	Knowledge of Complementary Feeding		Chi Square	P Value
	Poor	Good		
Primary& Below	20	7	1.882	0.390
Secondary	65	38		
Tertiary	112	48		
Total	197	93		

There is no statistically significant association between the educational level of respondents and their knowledge of complementary feeding ( $X^2= 1.882$ ;  $P= 0.390$ ). Thus we accept H<sub>0</sub>

**Hypothesis 2-** There is no relationship between age of respondents and knowledge of complementary feeding

The result of the relationship between age of respondents and knowledge of complementary feeding is shown in Table 4.7 below. It was observed that the difference between age of respondents and knowledge of complementary feeding was not statistically significant ( $X^2=4.298$ ,  $P>0.05$ ).

Since the P-value is greater than 0.05, the hypothesis is accepted and thus, there is no significant relationship between age of respondents and knowledge of complementary feeding. From the result, it could be seen that age of respondents does not have any significant influence on complementary feeding.

**Table 4.7 Relationship between age of respondents and knowledge of complementary feeding**

**H<sub>0</sub>:** There is no significant relationship between age of respondents and knowledge of complementary feeding

Level of Education	Knowledge of Complementary Feeding		Fishers Exact Test	P Value
	Poor	Good		
20 – 29	22	10	4.298	0.375
30 – 39	95	39		
40 – 49	54	36		
50 – 59	20	6		
60 +	6	2		
Total	197	93		

There is no statistically significant association between age of respondents and their knowledge of complementary feeding ( $X^2= 4.298$ ;  $P= 0.375$ ). We accept the  $H_0$

**Hypothesis 3** - There is no relationship between knowledge and level of involvement of respondents in complementary feeding

The result of the relationship between knowledge and level of involvement of respondents in complementary feeding is shown in Table 4.8 below. It was observed that the difference between knowledge and level of involvement of respondents in complementary feeding was not statistically significant ( $X^2=0.606$ ,  $P>0.05$ ).

Since the P-value is greater than 0.05, the hypothesis is accepted and thus, there is no significant relationship between age of respondents and knowledge of complementary feeding. This implies that respondents with poor knowledge of complementary feeding are less likely to have a good involvement in complementary feeding.



**Table 4.8 Relationship between knowledge and level of involvement in complementary feeding**

**H<sub>0</sub>:** There is no significant relationship between knowledge and level of involvement of respondents in complementary feeding

Knowledge of Complementary Feeding	Involvement in Complimentary Feeding		Fishers Exact Test	P Value
	Poor	Good		
Poor	64	133	0.606	0.497
Good	26	67		
Total	90	200		

There is no statistically significant association between respondents knowledge of complementary feeding and their involvement in complementary feeding ( $X^2= 0.606$ ;  $P= 0.497$ ); thus we accept  $H_0$ .

## **CHAPTER FIVE**

### **5.0 DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

WHO in 2008 defined complementary feeding as the introduction of food that are deemed appropriate and safe for children from the age of six months and above so as to ensure that infants and young children have the ability as well as opportunity to meet the continuously changing nutritional demands necessary for optimal growth, development and good health. Palmer (2009) also defined complementary feeding as the provision of other foods in addition to breast milk which can either be a special preparation for the infant or usual family foods that are modified in order to make them easy to eat.

#### **5.1 Socio-Demographic Characteristics**

Findings from this study revealed that out of a total of 290 men that were interviewed, most of them were middle aged men with a mean age of  $39.0 \pm 8.4$  years. Using chi-square analysis, there was however no association between age and knowledge of men on complementary feeding. Thus, based on findings from this study, age of the married men does not necessarily mean possession of adequate knowledge of complementary feeding.

According to Flacking et al. 2010, Father's level of education is an important indicator of his socio-economic status and often related to his amount of disposable household income. This may in turn influence involvement in infant feeding however, results of the study revealed that there was no statistically significant association between the educational level of respondents and their knowledge of complementary feeding though respondents had various educational backgrounds thus this information cannot be ascertained.

## **5.2 Knowledge of Complementary Feeding**

Findings from this study revealed that a larger percentage (67.9%) of respondents had poor knowledge of complementary feeding. Respondents' knowledge of complementary feeding was more knowledge passed down by family members and contemporaries. Only few (0.4%) of the respondents were able to give a correct definition of complementary feeding but there was no statistically significant relationship between knowledge and their involvement in complementary feeding ( $X^2 = 0.606$ ;  $P = 0.497$ ). This is unlike the findings reported in a Zambian based research (Magawa, 2012) where it was discovered that a lack of knowledge was implicated as a factor that affected male involvement in complementary feeding. It can therefore be deduced from the study that fathers made secondary decisions when it came to infant feeding. This may be attributed to them being not equipped with the knowledge and skills needed for feeding their children.

Many of the respondents (88.3%) did not know the appropriate time to introduce complementary foods as well. This was supported by results from NDHS 2013 that Nigerian infants are typically introduced to complementary foods both too early and too late contributing to Nigeria having some of the world's lowest maternal and child health indicators according to World Bank data. Many of the respondents also chose bottle feeding over feeding a child with cup and spoon. This may be attributed to feeding behaviours in high-income countries where some fathers express a preference for using breastmilk substitutes because they feel that bottlefeeding offers them an opportunity to bond with the infant (Jordan and Wall, 1990).

Knowledge of complementary feeding had repeatedly been researched in the female counterparts however and there have always been noteworthy increase in women's knowledge of complementary feeding habits. Nonetheless, it is safe to assume that the level of knowledge of complementary feeding in men are likely to change for so many reasons inclusive of which are availability of information on complementary feeding, the continuous shift in gender roles in this present dispensation as compared to what was experienced in the past and also the inclusion of men in aspects of sexual and family health issues including family planning and the all round development of the children from the onset of pregnancy to delivery and beyond that.

### **5.3 Level of Involvement in complementary feeding**

Studies have reported a wide variation between infant feeding knowledge and actual practice and involvement (Adebayo, Leshi and Sanusi, 2014; Uchendu, Ikefuna and Emodi, 2009) hence knowledge does not necessarily translate to good involvement and vice versa.

It has also been well documented that fathers lag behind mothers in their levels of involvement in caring for children across most societies (Lamb, 2005; Pleck&Masciadrelli, 2004). However, the involvement of men in complementary feeding practices of their infants varies from one father to the other. While some fathers were involved in essentially all aspects of complementary feeding others were not involved at all while some others were involved in only specific aspects, especially those that believed that complementary feeding is solely the role for the mothers.

There were some respondents that were found to be indecisive. Such respondents did not categorically state that they were involved but limited their involvements to some basic necessities such as provision of money for the purchase of appropriate complementary food as stated by at least 93.8% and another 80.0% stated that they assisted in feeding their children. These behaviours can be attributed to lack of practicable and effective information being rarely discussed in print despite engaging fathers in public health programs by public health researchers (Dilal, Dinant, Blanco, Crutzen, Mulugeta and Spigt, 2014).

A line however was drawn on some activities such as the preparation of the complementary food as found in this study where 44.8% stated that they did not help in preparing the food or sharing of information on complementary feeding with mothers even though researches have shown that male partners have also been engaged in breastfeeding promotion and education as well as being provided with knowledge and skills for optimal breastfeeding practices which had also been shown to positively impact exclusive breastfeeding rates (Susin and Giugliani, 2008). It might be safe to assume that these are seemingly invisible lines that

might not want to be crossed by respondents as doing so would be a shift in gender roles which might be unwelcoming to some males.

It is also remarkable that despite the low level of knowledge on complementary feeding gathered by males in this research, many were found to be averagely involved in complementary feeding as shown by a mean score of 12.2 with others having poor involvement.

This growing involvement of men in complementary feeding is partly explained by Aubele review in 2012 where suggestions were made that men do not have lot of decision-making power over child care and nutrition, because they lack experience in this domain. This might however change once men are presented with information which is capable of influencing their involvement positively.

Also in this study, 76.6% of the respondents said they encouraging their spouses to adhere to complementary feeding guidelines while other 73.8% assisting their spouses in completing house chores to allow her time to feed their infants. This behaviour corroborates with a study by Piwoz et al. 2003 that even though fathers might not make daily decisions about child care and feeding, they are however an important source of emotional, informational and economic support for mothers.

#### **5.4 Factors Influencing Knowledge of Complementary Feeding**

Studies have shown that a combination of complex factors including knowledge, attitudes, traditions, societal norms, support from partners, family members, and the wider community influence infant feeding decisions (NARESA, 2008), evidence on the importance of social support interventions such as male involvement on complementary feeding practices is however more limited (Aubele, 2012).

In this research, many factors were revealed to be influencers of respondents' knowledge on complementary feeding positively and otherwise. 56.9% of the respondents stated that the ease of access of information impacted on their knowledge. Thus access to information may be positively utilised in enhancing complementary feeding practices and behaviours among men.

Source of information of males on complementary feeding will go a long way to determine their quality of information. In this study, 47.2% stated that they learnt about complementary feeding from their friends. The influence of peer education may thus be an effective means to propagate information on complementary feeding as they might be more likely to listen to

their peers who might have had some experiences in the given field compared to some other people. This is because participants learn to exchange information among their peers rather than 'transmit' information, a powerful process that can diffuse new information quickly through existing community networks according to Bentley et al, 2014. This interpersonal communication approach engages participants to actively discuss new information, rather than passively receive information. It promotes greater openness and discussion among peer networks, families, couples resulting in positive health-related outcomes (Duggan, 2006).

Based on findings from this study, perception of gender roles may be a hindrance to acquiring knowledge on complementary feeding as slightly over 20% of the respondents believe that complementary feeding was solely the duty of women. In such a case, males may not see the importance of acquiring knowledge about a task that is not directly their responsibility. This ideology is shared by a Zambian research (Nguni, 2013) where it was stated that social-cultural factors in relation to gender roles was a barrier to male involvement. It is also supported by a Ugandan study in which both men and women said that taking responsibility for a child's health such as taking a child for immunization was a mothers' role. Also, some men are being stigmatised and are perceived as weaklings when seen to be taking their children for routine care such as growth monitoring (Nguni, 2013) hence this may influence their involvement negatively.

To improve knowledge and involvement of males in optimal complementary feeding, peer influence, family support and provision of adequate information amongst others are important points that must be harnessed in order to provide better health outcomes according to a study by Egata, Berhane and Worku, 2013.

### **5.5 Sources of Information on Complementary Feeding**

Based on this study, various sources of information from which respondents got knowledge on complementary feeding were identified. Results from this study revealed that health personnel's are regarded as verifiable and effective source of information on complementary feeding by most of the respondents. Thus this avenue may be harnessed to pass reliable information to males on complementary feeding.

The internet was also preferred by respondent to be a source of information however, information on the internet may not be reliable at all times hence the need to provide quality and more reliable information through other means such as Information Education and

communication (IEC) materials as well as the radio, which has a wider coverage than most forms of communication.

Harnessing a combination of these three avenues could therefore go a long way to promote acquiring of knowledge on complementary feeding by men thereby increasing their involvement in complementary feeding.

## **5.6 Conclusion**

The concept of complementary feeding has been proven to be a cost effective way of preventing nutritional impediments in infants and young children especially in the first 1000 days of life. While numerous researches have been carried out to determine the role men play in infant feeding and child care, not much had been done to determine what they know about complementary feeding, how it affects their involvement and what factors determine their knowledge.

Findings from this research shows that the level of knowledge of males on complementary feeding is still below par, however, improved access to information as revealed by this study may prove to be a potential for increasing knowledge and involvement of males in complementary feeding. It can as well help to reduce the influence of socio-cultural factors affecting knowledge of respondents especially those that pertain to the perception of gender roles and how it affects their infant feeding decisions with the goal of enhancing infant feeding practices within the household and ultimately reducing infant morbidity and mortality. Such a capital investment would in turn promote social and economic development of a community and a nation.

Also, only correct, consistent and coordinated messages on complementary feeding should be passed to the fathers by the health workers such as nutritionists, doctors and nurses who were revealed by most of the study participants to be provider of genuine information. This will avoid the misinterpretation of the same messages received by the men in order to ensure appropriate use of knowledge gathered.

## **5.7 Implication of findings to Health Promotion and Education**

Findings from this study revealed implications for health promotion and education. This study identified factors that influenced the knowledge of male respondents on complementary feeding. Majority of the respondents showcased a poor knowledge on complementary feeding however a higher percentage showed tendencies to be involved complementary feeding.

This study could thus serve as a guide for the implementation of health promotion and education specific interventions targeted at men using specific as well as integrated health promotion and education strategies such as training, peer education, effective communication and public enlightenment amongst others in order to ultimately improve the health of infants and young children for the ultimate growth and development of the nation.

### **5.7.1 Training**

This health promotion and education strategy focuses on providing men with skills that would foster their adoption and implementation of a health promotion activity thereby causing a change in attitude. Trainings that would focus on the provision of knowledge for men on complementary feeding could be organised in the form of workshops, seminars and conferences. Such trainings should focus on providing participants with practicable methods of applying complementary feeding guidelines and should be targeted at men at all levels of education.

The trainings should be comprehensive yet easy to understand and relate with by the participants. Themes that could be captured in such trainings can range from the appropriate time for introduction of complementary feeding to hygienic practices in complementary feeding to selection of appropriate and acceptable complementary food for their infants and young children. Information Education and Communication (IEC) materials such as leaflets and magazines could also be developed and given as gifts so as to further facilitate their learning.

### **5.7.2 Advocacy**

This strategy involves the championing of cause with the aim of causing positive actions towards the targeted goal or cause till it is set in motion and eventually achieved. This advocacy will be focus on men and in this case, the importance of the adoption of complementary feeding serves as the right incentive for an advocacy on matters relating to male adoption of appropriate complementary feeding practices .

Policies such as the introduction of paternal leaves for fathers of infants could be advocated for and implemented across board. This would help to encourage the men to be more involved in complementary feeding without having to miss out on their jobs which they place so much value on. It would also stimulate their interest in complementary feeding when the child approaches six months as they get involved in child care duties with their wives.



### **5.7.3 Peer Education**

This study revealed that a large number of male respondents got information about complementary feeding from their friends therefore, it could be inferred that peers have a significant influence on the behaviours of their mates. As such, peer groups education can be used as a possible method to help bridge the gap between knowledge and actual involvement in complementary feeding.

Peer groups could be formed after they have been trained on practical methods that would promote the adoption and application of complementary feeding. These sessions should be monitored by experienced personnels in the field of nutrition and/or child health and periodic reports be made to enhance proper monitoring and evaluation of such activities.

### **5.7.4 Effective communication and public enlightenment**

The use of Information Education and Communication materials can be designed and targeted at men from different backgrounds. Such materials should be simplified and while they are specifically targeted at men, care must be taken to ensure that gender sensitive themes that would demoralize males should be handled with care, evaluated regularly to ensure that they do not result into negative outcomes.

Other forms of media, including social media should be used in passing information targeted at promoting the adoption of complementary feeding thereby increasing knowledge and involvement of males in complementary feeding. Dramas and plays centered around themes on complementary feeding should be developed and aired on broadcasting communication platforms such as radio and television in order to propagate the message.

Public enlightenment campaigns could also be carried out by governmental agencies, non-governmental organisations and community based organisations. It is however very important that there is a continuous monitoring and evaluation of such interventions so as to modify materials used when necessary.

### **5.8: Recommendations**

Given the findings discovered in the course of this research and the conclusion drawn from such findings, the following recommendation are made:

1. Trainings, peer education and public enlightenment methods of health promotion should be used to improve knowledge and involvement of men in complementary feeding.
2. Further research on interventions targeted at the adoption of complementary feeding by men should be done. Approaches that will combine both males and females should be looked into in order to further enhance growth and development of infants and young children.
3. More researches targeted at determining the effectiveness of specific methods that would increase the level of knowledge among males on complementary feeding should be conducted and implemented.
4. Public policies targeted at male involvement in child care should be formulated and implemented in order to further facilitate the knowledge of men on complementary feeding and further develop their involvement in proper complementary feeding guidelines.
5. There is a need for an aggressive use of the social media and other health related platforms to propagate complementary feeding information and there is also a need for them to be regularly monitored to ensure that there are no disparities in the information passed across.
6. IEC materials should be utilised at health facilities to further increase the knowledge of men on complementary feeding and guide them appropriately in their involvement.
7. Comprehensive research using qualitative tools such as in-depth interviews and focused group discussions should be carried out in order to further understand the true extent of male involvement in complementary feeding and also understand how the various factors influencing their knowledge and involvement truly come to play.

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## APPENDIX I

## QUESTIONNAIRE

### KNOWLEDGE AND INVOLVEMENT OF MARRIED MEN IN COMPLEMENTARY FEEDING IN IBADAN SOUTH WEST LOCAL GOVERNMENT AREA OF OYO STATE

Serial number.....

Dear Respondent,

I am a postgraduate student of the department of Health Promotion and Education, Faculty of Public Health, College of Medicine, University of Ibadan. I request your participation in this research I am conducting titled “Knowledge and involvement of married men in complementary feeding in Ibadan South West Local Government Area of Oyo state”.

Your participation is voluntary and all your responses will be kept confidential and only those directly involved with this research will have access to the data. Please listen to all the questions carefully and give your best responses as findings from the study will be of immense benefit at promoting healthy behavioural change. Thank you for taking your time to assist me in this research.

If you have read the information above concerning the study and you understand what will be required of you if I take part in the study, please indicate by signing below.

.....

Respondent's signature/Date

**Instruction:** Please respond to the following brief statements by placing a check in the appropriate box below. Please be as open as possible and answer based on what you know.

#### SECTION A: Socio-demographic Characteristics

1. How old are you? .....
2. Highest level of education attained:  
(1) Primary  (2) Secondary  (3) Tertiary  (4) None
3. Ethnicity: (1) Igbo  (2) Yoruba  (3) Hausa   
(4) Others (please specify).....

4. Religion: (1) Christianity  (2) Islam  (3) Traditional   
 (4) Others (please specify) .....
5. Occupation (please specify).....
6. Number of children .....
7. Do you have a child within the age range of 6 months to 2 years?(1) Yes  (2) No
8. How old is your youngest child? .....
9. Have you ever fed your child within the age range of 6 months to 2 years before?  
 (1) Yes  (2) No

**SECTION B: Knowledge of Complementary Feeding**

What do you know about the following?

S/N	QUESTION	RESPONSES
10.	What does the term complementary feeding mean?	
11.	What is the target age range for complementary feeding?	
12.	Give two important classes of food to be included in the composition of a complementary food	
13.	Give the types of food that should be in an adequate complementary food	
14.	At what age should a child start eating other foods and drinks other than breast milk?	
15.	How often should a baby be fed in a day?	
16.	In what way does complementary feeding complement	

	breastfeeding?	
17.	Mention two ways of encouraging a child to eat complementary foods	
18.	Mention two methods of maintaining hygiene when preparing complementary foods	
19.	Does commencing complementary feeding mean putting a stop to breastfeeding the child?	Yes <input type="checkbox"/>
		No <input type="checkbox"/>
20.	Bottle feeding is better than feeding a child with cup and spoon	Yes <input type="checkbox"/>
		No <input type="checkbox"/>
21.	Mothers are the only ones who should feed infants	Yes <input type="checkbox"/>
		No <input type="checkbox"/>
22.	TOTAL POINT OBTAINED	
23.	CODE	

**SECTION C: Level of Involvement in complementary feeding**

What is your involvement in each of the following?

SN	STATEMENT	YES	NO
24.	I provide money to purchase complementary foods		
25.	I do not help in the preparation of complementary foods for children		
26.	I help in feeding my children		
27.	I do not help in cleaning up utensils for feeding when necessary		
28.	I do not share information I get on complementary feeding with my wife		

29.	I do not help to purchase complementary foods		
30.	I encourage my wife to comply with complementary feeding guidelines for infants and young children		
31.	I do not encourage family planning for child spacing		
32.	I relieve my wife of household chores so that she can feed the children		
33.	I ensure a healthy feeding environment for my infants and young children		
34.	TOTAL POINTS OBTAINED		
35.	CODE		

#### SECTION D: Factors Influencing Knowledge of Complementary Feeding

Which of the following factors influence your knowledge of complementary feeding?

SN	STATEMENT	YES	NO
36.	Information on complementary feeding are easily accessible to me		
37.	I follow my wife to health centre for child routine check up and immunization		
38.	I spend limited time at home with the children because of my work		
39.	My friends already know about complementary feeding so I learn from them		
40.	My wife sometimes discuss issues on complementary feeding with me		
41.	I have come across complementary feeding before in the course of my educational pursuit		
42.	Only women should be concerned with complementary feeding		
43.	Others (please specify)		

#### SECTION E: Sources of Information on Complementary Feeding



SN	STATEMENT	RESPONSES
44.	What are the sources of information available to you on complementary feeding?	
45.	What is your most preferred source of information on complementary feeding?	
46.	What information have you ever come across on complementary feeding?	
47.	What information do you think you need to be involved in complementary feeding?	
48.	What motivates you to seek information on complementary feeding?	

## APPENDIX II

### ÌWÉ ÌBÉÈRÈ

#### T'I ÌMÒ ÀTI ÌKÓPA ÀWỌN ỌKÙNRIN NÍNÚ ÀFIKÚN OÚNJE FÚN ỌMỌDÉ NÍ ÌJỌBA ÌBÍLÈ GÚSÙ ÌWỌ-OÒRÙN ÌBÀDÀN NÍ ÌPÍNÌLÈ ỌYỌ

#### FOOMU IFOWOSI

Olùwádíí mi ọwọ̀n,

Oruko mi ni ADEWALE DAMILOLA ADESOLA, mo jẹ akẹkọọ olóyè kejì ti ẹka-ẹkọ ti Ìgbélárugẹ Ẹkọ nípa Ìlera, ti Kólẹ̀jì Ìmò-Ìṣẹ̀gùn, Fásitì Ìbàdàn. Mo bèèrè fún ìfowwósowópò yín nínú iwádíí tí mò ní ẹ; Ìmò àti Ìkópa àwọn Ọkùnrin nínú Àfikún Oúnje fún Ọmọdé ní Ìjọba Ìbílẹ̀ Gúsù Ìwọ Oòrùn Ìbàdàn ní Ìpínlẹ̀ Ọyọ.

Wọ̀fún ni ìkópa yín, gbogbo ohun tí a bá sì gbà nínú iwádíí yíí máa wà ní ìpamọ́ dé bi í pé àwọn tó iṣẹ́ iwádíí yíí ká nikan ni yóò ní ànfàání sí i.

Jọwọ́, ka gbogbo ìbèèrè náà, kí o sì dàhùn bó ẹ tọ nítorí ẹsì iwádíí yíí yóò mú ìdẹ̀rùn bá àwùjọ wa. Mo mọ́ riri oore yíí.

Ti o batikaalayeti o waniokeyi nipa ekoyiti o si ye e yekeyeti o simoohunti o nilolatikopaninuekoyi, jowo fi isami re siisaleyi.

.....  
Isamiolùwádíí

Déètì: .....

Nọmbà: .....

**Ìtọ̀nisọ̀nà:** ẸJọ́, dàhùn àwọn ìbèèrè wọ̀nyí nípa yíyan ẹ̀yí tó yẹ. Ẹ jọ́, dàhùn lóri ìmò tí o ní.

**ÌPÍN A: NÍPA OLÙDÁHÙN**

1. Iye ọdún? .....
2. Ìpele èkó tó ga jù? [ ] ilé-ìwé aláákòbèrè [ ] ilé-ìwé girama [ ] Ilé-ìwé gíga  
[ ] n ò lọ ilé-ìwé
3. Èyà: [ ] Ìgbò [ ] Yorùbá [ ] Haúsá [ ] ìdáhùn mìíràn (jòó, sọ fún wa)  
.....
4. Èsìn: [ ] Krìsténì [ ] Mùsùlùmí [ ] ìbílẹ̀ [ ] ìdáhùn mìíràn (jòó, sọ fún wa)  
wa) .....
5. Iṣẹ̀ dọ́jọ̀: (jòó, sọ fún wa) .....
6. Iye ọmọ tí ẹ̀ bí? .....
7. Njẹ́ ẹ̀ ní ọmọ tó wà láàárín oṣù méfà sí ọdún méjì? [ ] bẹ̀ ni [ ] bẹ̀ kọ
8. Ọmọ ọdún mélòó ni ọmọ yín tó kéré jù? .....
9. Njẹ́ ẹ̀ ti fún ọmọ yín tó wà láàárín oṣù méfà sí ọdún méjì? [ ] bẹ̀ ni [ ] bẹ̀ kọ

### ÌPÍN B: ÌMỌ̀ ÀFIKÚN OÚNJẸ

Kí ni ẹ̀ mọ̀ nípa àwọn wònyí?

Ohun	Ìbèèrè	Ìdáhùn
10.	Kí ni ohun tí àfikún oúnjẹ tùmò sí?	
11.	Kí ni àfojúsùn iye ọdún fún àfikún oúnjẹ?	
12.	Sọ ọ̀wọ̀ oúnjẹ pàtàkì tí ó yẹ kí ó wà nínú ìpèsè àfikún oúnjẹ	
13.	Sọ irú oúnjẹ tó yẹ kó pèsè sínú àfikún oúnjẹ	
14.	Iye ọdún wo ló yẹ kí ọmọdé bèrè sí ní í jẹ àwọn oúnjẹ àti àwọn ohun mímu mìíràn yàtò sí wàrà inú ọmú?	
15.	Bí èmélòó ló yẹ kí ọmọ fi mu ọmú?	

16.	Ọ̀nà wo ní àfikún ọ̀nṣe fí n̄ ṣ̀èrànwọ́ fún wàrà ọ̀mú?	
17.	So ọ̀nà méjì tí a fí n̄ ṣ̀ èrànwọ́ fún ọ̀mọ́dé láti je àfikún ọ̀nṣe?	
18.	So ọ̀nà àgbàṣe-n̄nkan méjì láti rí i pé ìmọ́tótó wà ní àkokò ìpèsè	
19.	N̄jẹ́ bíbèrè àfikún ọ̀nṣe túmò sí pé kí á fòpin sí fífún ọ̀mọ́dé lómú?	bẹ̀ẹ̀ ní [ ]
		bẹ̀ẹ̀ kọ́ [ ]
20.	Fífún ọ̀mọ́ ní ọ̀nṣe láti inú fídà dára ju fífún ọ̀mọ́ lóúnṣe pèlú kòṣòbù àti ṣ̀íbí	bẹ̀ẹ̀ ní [ ]
		bẹ̀ẹ̀ kọ́ [ ]
21.	Àwọn ìyá n̄nkan ló yẹ kó fún ọ̀mọ́- lóúnṣe? Mothers are the only ones who should feed infants	bẹ̀ẹ̀ ní [ ]
		bẹ̀ẹ̀ kọ́ [ ]
22.	IYE ÀMÌ LÁPAPÒ	
23.	KÓÒDÙ	

#### ÌPÍN D: Ìpèlè Ìkópa níní Àfikún Ọ̀nṣe

Kí ni ìkópa yín nínú ọ̀kọ̀ọ́kan àwọn wònyí?

Nọ́mbà	ISQ	Bẹ̀ẹ̀ NI	Bẹ̀ẹ̀ KỌ́
24.	Mo máa n̄ pèsè owó láti ra àfikún ọ̀nṣe.		
25.	N kì í kópa nínú ìpèsè àfikún ọ̀nṣe.		
26.	Mo máa kópa nínú fífún ọ̀mọ́ mi lóúnṣe		
27.	N kì í kópa nínú fífọ́/ṣ̀íṣan ohun èlò fún ọ̀nṣe nígbà tó bá yẹ		
28.	N kì í bá ìyàwó mi sọ̀rò lórí ìmò tí mo ní tàbí rí nípa àfikún ọ̀nṣe.		

29.	N kì í sèrànwó nípa rira àfikún oúnjẹ.		
30.	Mo máa n gba iyawó mi níyànjú nípa láti tẹlẹ ilànà àfikún oúnjẹ. Fún ọmọ-ọwọ àti ọmodé.		
31.	N kì í gba èyàn níyànjú nípa ilànà ètò sọmọ bíbí fún fífi ààyè sí àárín ọmọ		
32.	Mo máa n bá iyawó mi se ise ilé kí ó ba lè ráyè àti fún àwọn ọmọ lóúnjẹ.		
33.	Mo máa rí i pé àyíká mọ dáadáa fún àwọn ọmọ-ọwọ àti àwọn ọmodé.		
34.	IYE ÀMÌ LÁPAPÒ		
35.	KÓÒDÙ		

#### ÌPÍN E: Àwọn ohun tó nípa lóri Ìmò Àfikún Oúnjẹ

Èwo nínú àwọn wònyí ló nípa lóri ìmò àfikún oúnjẹ?

Nọmbà	ISO	Bẹ̀ NI	Bẹ̀ KÓ
36.	Ìmò nípa àfikún oúnjẹ wà lárọ̀wótó		
37.	Mo máa n tẹlẹ iyawó mi lọ ọdọ elétò ilera fún àyèwò ọmodé àti abéré àjesára.		
38.	Mó máa lo iwónbà àsikò nílẹ pẹlú àwọn ọmọ nítorí ise		
39.	Àwọn ọrẹ mi ti mọ nípa àfikún oúnjẹ, ọdọ wọn ni mo ti gbọ nípa rẹ		
40.	Iyawó mi máa n jíròrò nípa àfikún oúnjẹ pẹlú mi lẹkòòkan.		
41.	Mo ti šalábàápàdé àfikún oúnjẹ tẹlẹ ní àkokò èkọ mi		
42.	Obìnrin nìkan ló yẹ kí ó gbájúmọ àfikún oúnjẹ		
43.	Ìdáhùn mìíràn (Jọọ, jẹ ká mọ)		

**ÌPÍN È: Orísun ìmò Àfikún Oúnjẹ**

<b>Nọmbà</b>	<b>ISO</b>	<b>Ìdáhùn</b>
<b>44.</b>	Kí ni àwọn orísun ìmò tó wà fún un yín lórí àfikún oúnjẹ?	
<b>45.</b>	Kí ni orísun ìmò lorí àfikún oúnjẹ tí ẹ faramó jù?	
<b>46.</b>	Ìmò wo ni ẹ ti bá pàdé rí lórí àfikún oúnjẹ?	
<b>47.</b>	Ìmò wo lẹ rò pé ó yẹ kí ẹ darapọ mọ lórí àfikún oúnjẹ?	
<b>48.</b>	Kí ló gún un yín ní kẹsẹ láti sàwá rí ìmò lórí àfikún oúnjẹ?	

### **APPENDIX III**

#### **INFORMED CONSENT FORM**

This study is being conducted by AdewaleDamilola Adesola of the Department of Health Promotion and Education, College of Medicine, University of Ibadan, Oyo state, Nigeria. The purpose of this study is to investigate knowledge and involvement of married men in complementary feeding in Ibadan South West Local Government Area of Oyo state”.

Multistage sampling technique will be used for this study to select 290 married men in the local government area. The study will employ quantitative method of data collection using interviewer administered semi-structured questionnaire. The research does not require collection of invasive materials. Therefore, safety of the participants is guaranteed. However if respondents feel uncomfortable with any of the questions asked may leave such questions unanswered.

Although there are no direct and immediate benefits to participants, the information gathered from this study can be used towards improving the level of knowledge of men in complementary feeding as well as designing interventions that will be targeted at men for the adoption of quality complementary feeding guidelines so as to reduce infant mortality and morbidity ultimately.

The trust of the participants would be gained by assuring them that there would be no means of identification on the forms. The information gotten from them would be stored properly with limited access to anyone but authorized personnel and an agreement form would be signed by the researcher.

**Statement of person obtaining informed consent:**

I have fully explained this research to .....  
and have given sufficient information, including about risks and benefits, to make an informed decision.

DATE: .....SIGNATURE:.....

NAME:.....

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**Statement of person giving consent:**

I have read the description of the research and I understand that my participation is voluntary. I know enough about the purpose, methods, risks and benefits of the research to judge that I want to partake in it. I understand that I may freely stop being part of this study at any time. I have received a copy of this consent form and additional information sheet to keep for myself.

DATE:.....SIGNATURE:.....

NAME:.....

**Detailed contact information**

This research has been approved by the Oyo state Review Ethical Committee and the Chairman of this committee can be contacted at Ministry of Health, Department of planning, research & statistics division, Private mail bag No: 5027, Oyo state of Nigeria.

In addition, if you have any question about your participation in this research, you can contact:

The principal investigator: Adewale Damilola Adesola  
Department of Health Promotion and Education, College of Medicine, University of Ibadan.  
Phone number/email address: 08057412442/damisola.adewale@gmail.com

You can also contact the supervisor of this project Dr O.E Oyewole at the Department of Health Promotion and Education, College of Medicine, University College Hospital, Ibadan.

## APPENDIX IV

### SCORES FOR KNOWLEDGE QUESTIONS

S/N	KNOWLEDGE QUESTION	CORRECT ANSWERS	SCORE ASSIGNED
10	What does the term complementary feeding mean?	Giving infant sother foods or drinks in addition to breast milk	2
11	What is the target age range for complementary feeding?	6 – 24 months	2
12	Give two important food groups to be included in athe composition of a complementary food	Any two of;  Protein, carbohydrate, fats and oils, vitamins, minerals and water	2
13	Give the types of food that should be in an adequate complementary food	Cereals and grains, legumes, fruits and vegetables, roots and tubers, meat and meat products, fish and fish products, water	7
14	At what age should a child start eating other foods and drinks apart from breast milk?	6 months	2
15	How often should a baby be fed in a day?	On demand	2

16	In what way does complementary feeding complement breast feeding?	It provides necessary nutrients for the child when breast milk is no longer sufficient	2
17	Mention two ways of encouraging a child to eat complementary foods	<p>Any two of:</p> <p>Supervise the child's meal time</p> <p>Put the child's food in a separate bowl so as to allow him or her to eat the correct amount</p> <p>Sit with the child at mealtime so as to watch what the child is eating and offer help where necessary</p> <p>Show a good sense of humour while the child is eating</p> <p>Once the child has stopped eating, wait a little and then offer some more</p> <p>Do not force-feed</p> <p>Mix foods together to avoid picky eating or eating of only favourite foods</p> <p>Do not give too much liquid</p>	2

		<p>before or during meal time so as not to decrease appetite</p> <p>Play games to persuade reluctant children to eat</p> <p>Feed as soon as the child is hungry</p> <p>Do not feed when the child is sleepy</p>	
<b>18</b>	Mention two methods of maintaining hygiene when preparing complementary foods	<p>Any two of:</p> <p>Wash hands with soap before preparing food</p> <p>Use fresh foods that look and smell good</p> <p>Cover cooked foods and eat within 2 hours if there is no refrigerator</p> <p>Wash children's hands before meals</p> <p>Feed the children with clean cups and spoons and never a feeding</p>	2

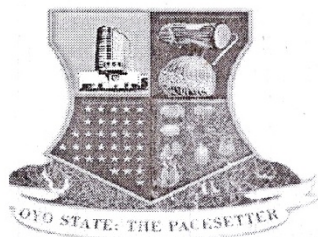
		<p>bottle</p> <p>Keep animals outside the house</p> <p>Wash hands with soap after using the toilet and after cleaning baby's bottom</p> <p>Wash dirty nappies straightaway or keep them in air tight bags to keep flies off</p> <p>Store foods from rats, mice, rodents, cockroaches and flies</p> <p>Protect stored drinking water from animals, dust, dirty hands etc</p> <p>Stpre foods and crops in cool dry place</p>	
<b>19</b>	Does commencing complementary feeding mean putting a stop to breast feeding?	No	2
<b>20</b>	Botte feeding is better than feeding a child with cup and spoon	No	2
<b>21</b>	Mothers ae the only ones who should	No	2

	feed infants		
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TELEGRAMS.....

TELEPHONE.....



**MINISTRY OF HEALTH**  
**DEPARTMENT OF PLANNING, RESEARCH & STATISTICS DIVISION**  
**PRIVATE MAIL BAG NO. 5027, OYO STATE OF NIGERIA**

Your Ref. No. ....

All communications should be addressed to

the Honorable Commissioner quoting

Our Ref. No. AD 13/ 479/250

15<sup>th</sup> November, 2016

The Principal Investigator,  
Department of Public Health,  
College of Medicine,  
University of Ibadan,  
Oyo State.

**Attention: Adewale Damilola**

**ETHICAL APPROVAL FOR THE IMPLEMENTATION  
OF YOUR RESEARCH PROPOSAL IN OYO STATE**

This is to acknowledge that your Research Proposal titled: Knowledge and Involvement of Married men In complementary Feeding In Ibadan South West Local Government Area Of Oyo State." has been reviewed by the Oyo State Ethical Review Committee.

2. The committee has noted your compliance. In the light of this, I am pleased to convey to you the full approval by the committee for the implementation of the Research Proposal in Oyo State, Nigeria.

3. Please note that the National Code for Health Research Ethics requires you to comply with all institutional guidelines, rules and regulations, in line with this, the Committee will monitor closely and follow up the implementation of the research study. However, the Ministry of Health would like to have a copy of the results and conclusions of findings as this will help in policy making in the health sector.

4. Wishing you all the best.

  
Dr. Abbas Gbolahan

Director, Planning, Research & Statistics

Secretary, Oyo State, Research Ethical Review Committee

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